

Memorandum

To: *Justin Messner, WSB & Associates, Inc.*

From: *Jeffrey Rice, WSB & Associates, Inc.*

Date: *November 10, 2015*

Re: *Environmental Desktop Review
Pleasant Park Site
Tonka Bay, Minnesota
WSB Project No.: 1987-570*

WSB was retained by the city of Tonka Bay (the City) to conduct an environmental desktop review for the Pleasant Park site located between Pleasant Lane East and Pleasant Lane West in Tonka Bay, Minnesota (the Property). The objective of the environmental desktop review was to identify a possible source or cause of sinkhole formations at the Property and to determine if hazardous and/or contaminated materials are present at the sinkholes. The results of the environmental desktop review will also assist in defining the scope of the Limited Phase II Environmental Site Assessment. A site location map and Property detail map are included as **Figure 1** and **Figure 2**.

WSB completed the following items as part of the environmental desktop review:

- Database review
- Review of historical aerial photographs
- Property reconnaissance
- Review of other pertinent site documents (if available)

WSB understands that the City would be interested in remediating any identified contamination or buried solid waste if grant funding can be obtained for the clean-up. Photographs of current Property conditions are included as **Appendix A**.

Database Review

WSB reviewed two Minnesota Pollution Control Agency (MPCA) databases to identify any verified or potentially contaminated sites that may be associated with sinkhole formations at the Property. WSB reviewed the Minnesota Department of Health (MDH) County Well Index (CWI) database to identify wells at the Property and the surrounding area. Lastly, WSB review the Minnesota Department of Natural Resources (DNR) Topographic Maps database to identify any noted land uses for the Property. The following databases were searched as part of this review:

- MPCA "What's in My Neighborhood?" database
- MPCA Storage Tank database
- MDH County Well Index database
- DNR Topographic Maps database

A review of the MPCA databases did not identify any listings for the Property or the adjacent properties. Two (2) MPCA database listings were identified within 1,000 feet of Property (beyond adjacent) and are identified in *Figure 3*. The surrounding area listings included:

- One (1) Leak listing
 - Indicates a petroleum tank leak has occurred at the site
- One (1) Multiple Activities listing
 - Indicates the site is present on more than one MPCA database. This multiple activity listing includes one petroleum leak site and one tank site.

The surrounding area listings identified in the MPCA database are at least 500 feet from the Property and have been issued site closure by the MPCA. Site closure does not indicate the site is free of contamination. Site closure does indicate that an investigation and/or cleanup has been completed and the leak has been determined not to pose a threat to human health or the environment. Based on their closed regulatory status and distance from the Property, it is unlikely that these sites have impacted the Property.

A review of the MDH well database did not identify any listings for the Property. Seven (7) verified, domestic wells were identified to the south, east, and west of the Property. Static water levels in the adjacent wells ranged from 48 feet to 80 feet below ground surface and no fill material or debris was noted in any of the MDH well logs.

One (1) water well was identified in the MDH CWI within 1,000 feet of Property (beyond adjacent) to the southwest. The commercial well has a static water level of 8 feet below ground surface and no fill material or debris was noted in the well log. Well identification numbers and locations are depicted in *Figure 4*.

A review of the Minnesota DNR topographic maps identified a gravel pit located at the North side of the Property and northern adjacent property. The southern half of the Property is depicted as vegetated. Areas to the west and northeast are identified as marshes or swamps. Local features and Property topography are depicted in *Figure 5*.

Review of Historical Aerials

Historical aerial photographs were obtained through Environmental Risk Information Services, Ltd. (ERIS), a commercial regulatory database service provider. ERIS provided historical aerial photographs of the Property and surrounding area dating back to 1937. Aerial photographs were reviewed for the years 1937, 1940, 1947, 1953, 1957, 1964, 1969, 1979, 1984, 1991, 1997, 2003, 2008 and 2013 (see *Appendix B*).

Property Observations

The southern half of the Property was undeveloped land in the 1937 and consecutive photographs. Ground disturbance, from what if most likely a gravel mining operation, is visible at the east central portion of the Property in the 1937 to 1969 photographs and at

the northern portion of the Property in the 1953 to 1969 photographs. Noticeable deep depressions are present in the mining areas. After the 1969 aerial photograph, the ground disturbance at the northern half of the Property is no longer visible and is replaced with manicured grass and scattered trees in the 1979 and consecutive photographs.

Adjacent Property Observations

North – The northern adjacent property is undeveloped land in the 1937 to 1947 photographs. Ground disturbance (likely gravel mining) started northeast of the Property in the 1937 photograph and expanded south and west onto the Property through the 1969 photograph. The 1979 aerial photograph shows the area to the north developed as residential properties.

East – Undeveloped wooded areas followed by a paved road are depicted east of the Property in the 1937 to 1969 photographs. Additionally, exposed soil is apparent in the 1937 to 1969 photographs. An access road and residential structures begin to develop in the 1979 and subsequent photographs.

South – Undeveloped wooded areas are depicted south of the Property in the 1937 to 1964 photographs. An access road is located south of the Property in the 1969 and subsequent photographs. Residential structures are present in the 1979 and subsequent photographs.

West – Undeveloped wetlands, woodlands and agricultural land are depicted west of the Property in the 1937 through 1957 photographs. One structure is depicted west of the Property in the 1964 and subsequent photographs. Additional residential properties continue to develop west of the Property in the 1969 and subsequent photographs.

Site Reconnaissance

WSB conducted a site walkthrough and reconnaissance of the Property, adjacent properties and surrounding area on November 3, 2015. The site walkthrough included a visual assessment of the Property grounds and a roadside assessment, limited to the public right-of-way, for the adjacent properties and the surrounding area.

General Site Setting

The Property is currently developed as a public park and is bordered by a vacant parcel to the north, Pleasant Lane to the south, Pleasant Lane East to the east, and Pleasant Lane West to the west. The area is predominantly wooded residential properties with Lake Minnetonka located both to the east and west. The Property includes a manicured lawn at the northern half and a wooded area at the southern half. Additionally, amenities including a volleyball court, picnic tables and a swing set are located in the manicured grass area, near the center of the park.

Site Observations

During the site reconnaissance, the following was observed:

- Patches of new grass and top soil were present throughout the northern half of the Property.
- Numerous scattered depressions and uneven terrain were observed at the northern portion of the Property which continued to the northern vacant parcel.
- A large area of bare soil was observed in a depression at the northwest corner of the Property.
- Two standpipes were observed at the vacant parcel north of the Property, which according to the City, are cleanouts for the City's sewer lines.

Site reconnaissance photographs are included in *Appendix A*.

Review of Site Documents

No additional documents related to the site were available for the purpose of the environmental desktop review.

Conclusion

Our historical environmental review of the Property has identified two small mining areas located at the north and east central portions of the Property that operated from the mid-1930's through the late 1960's/early 1970's. The deep depressions associated with the mined areas appeared to have been backfilled and established as turf in the early 1970's. The review did not identify any known types/sources of contamination at the Property or adjacent properties. Further, it is unknown what materials were used to backfill the former gravel mining areas at the Property and adjacent properties.

The site reconnaissance identified a number of depressions, fill areas and areas of distressed or dead vegetation. These areas appear to coincide with areas of historical gravel mining at the northern half of the Property. It is likely that the sinkhole formations at the Property are associated with poor or inadequate fill materials used to fill/restore the mining areas.

Recommendations

Based on the findings of this memorandum, WSB recommends the completion of a Limited Phase II Environmental Site Assessment (Phase II) that includes approximately 6 to 8 test pits conducted in the depression areas at the north half of the Property. A sufficient number of test pits should be conducted to determine the general backfill sources/materials and approximate vertical and horizontal extents of the backfill material.

The Limited Phase II should include the following:

1. Excavated soil shall be visually assessed for the presence of buried debris and field screened with a photoionization detector (PID) meter at regular intervals for petroleum related hydrocarbons.

2. If buried debris is encountered it shall be visually assessed for the presence of asbestos-containing materials (ACM), lead, mercury, polychlorinated biphenyls and/or other contaminants that may require special handling or disposal. Excavated soil shall be placed back into the excavation in approximately the same intervals as it was removed.
3. If petroleum odors or elevated PID readings are encountered during the test pit investigation soil samples shall be collected for laboratory analysis of the following parameters:
 - DRO
 - GRO/BTEX/MTBE
 - Grain size with Hydrometer
 - Lead
 - SVOC's
 - Additional parameters pending field observations
4. If field observations indicate the presence of suspect contamination, groundwater samples shall be collected for laboratory analysis of the following parameters:
 - DRO
 - GRO
 - VOC's
 - Lead
 - Additional parameters pending field observations
5. A Phase II ESA report shall be prepared summarizing the findings of the Limited Phase II Investigation.

If you have any questions or need additional information, please contact me at 763-270-3471 or jrice@wsbeng.com.

Enclosures:

Figures

Appendix A – Photographic Documentation

Appendix B – Historical Aerial Photographs

FIGURES

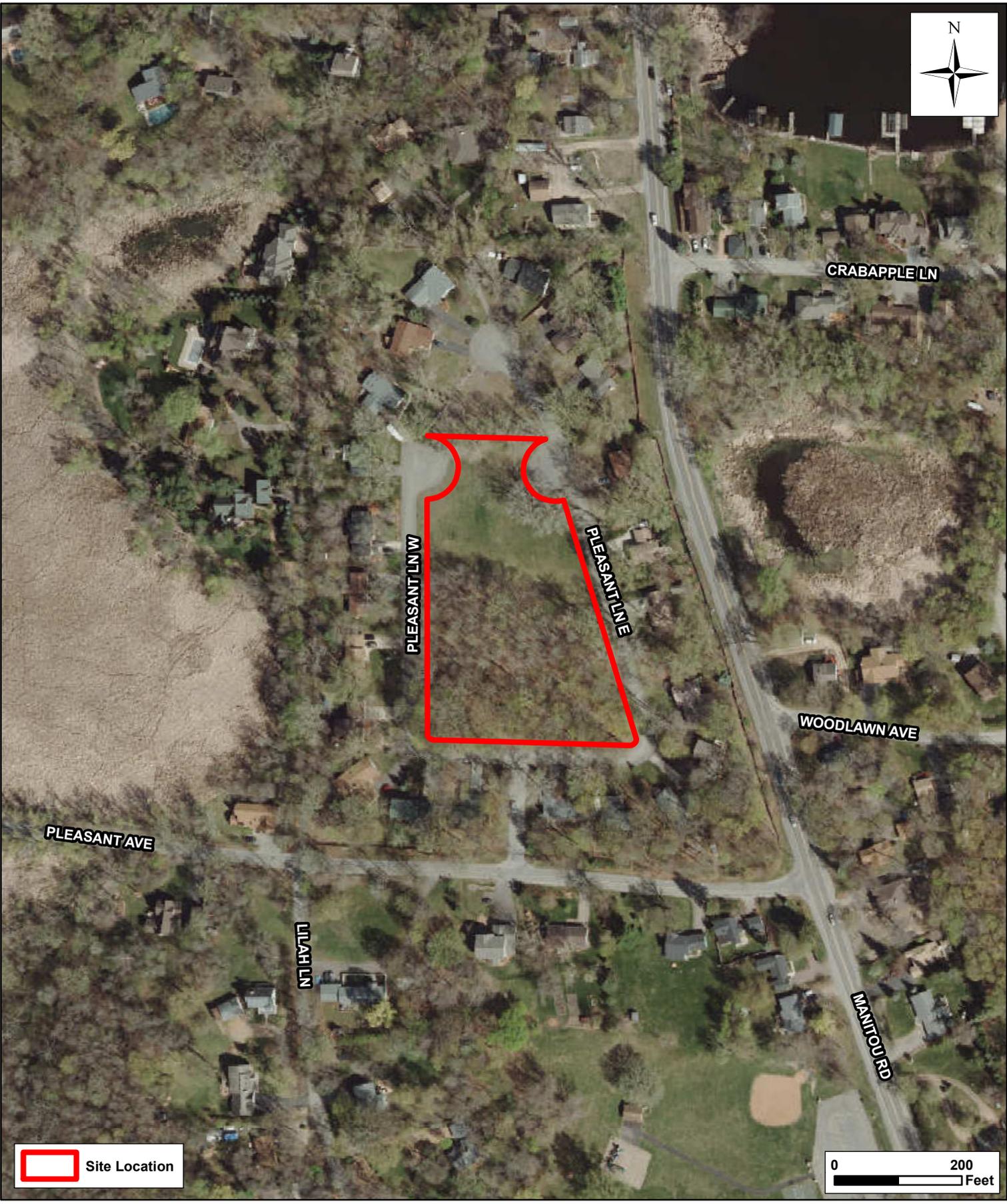
Project Location Map

Property Detail Map

MPCA What's In My Neighborhood Map

MDH County Well Index Map

DNR Topographic Map



**Figure 1: Pleasant Park
Site Location Map**
Tonka Bay, MN





	Site Location
	Dead Grass
	Surface Depressions
	Newly Planted Grass Patch

**Figure 2: Pleasant Park
Property Detail Map**
Tonka Bay, MN



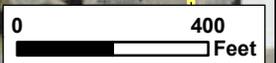


**Figure 3: Pleasant Park
What's In My Neighborhood Search Results
Tonka Bay, MN**



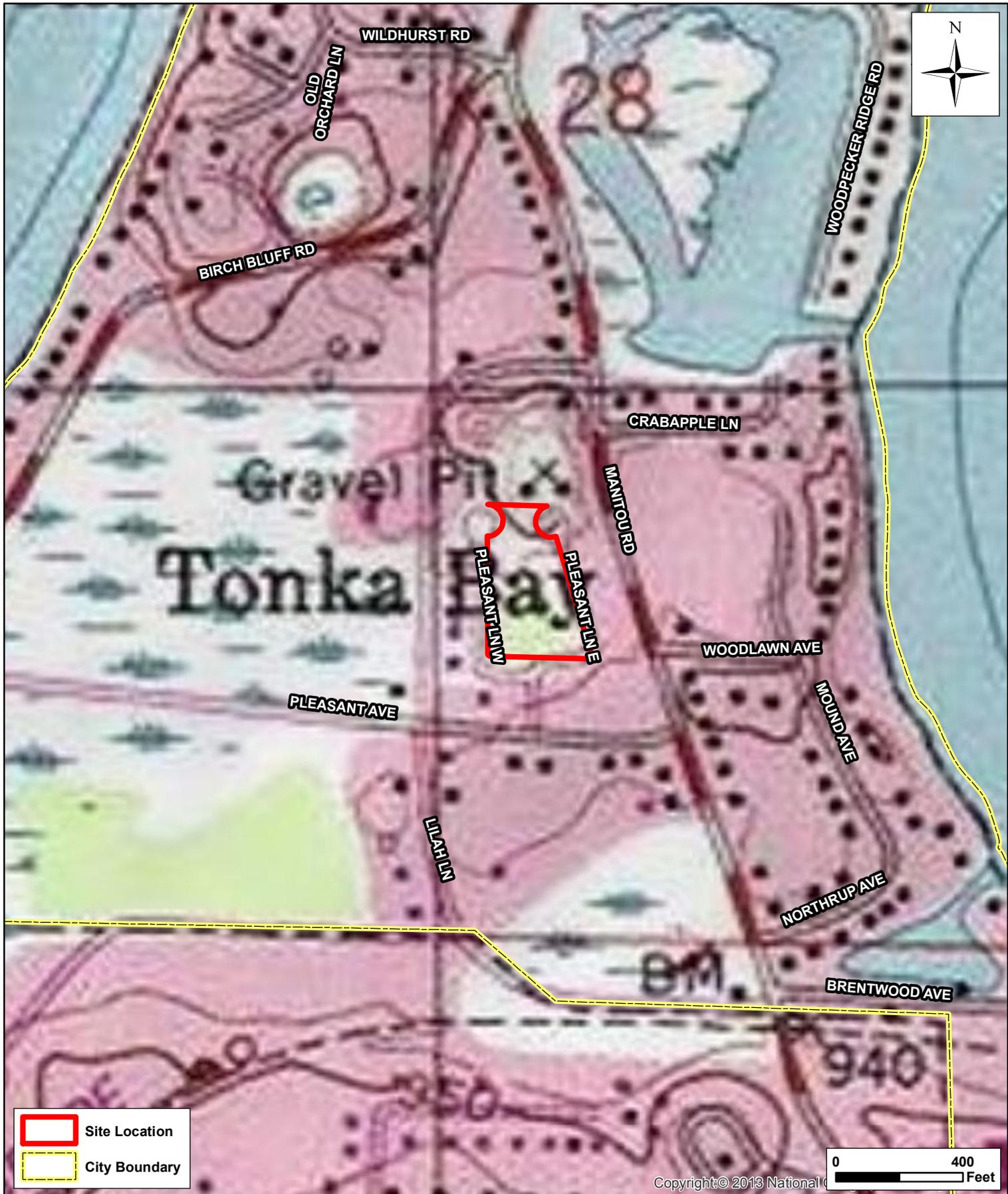


 Site Location
 1000ft Buffer
 City Boundary
 Verified Wells



**Figure 4: Pleasant Park
County Well Index Map
Tonka Bay, MN**





 Site Location
 City Boundary

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0 400 Feet




**Figure 5: Pleasant Park
USGS Topo Map
Tonka Bay, MN**



Appendix A
Photographic Documentation

Photographic Log
Pleasant Park Environmental Review
Tonka Bay, Minnesota



Photo 1 - Pleasant Park Sign from the north end of the Property facing south



Photo 2 - Western boundary of the Property facing south

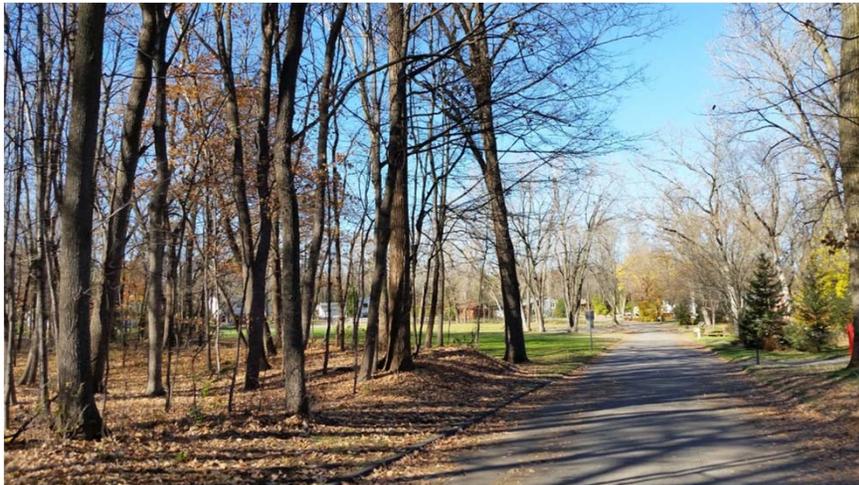


Photo 3 - Eastern boundary of the Property facing north



Photo 4 - View of the park facing southeast

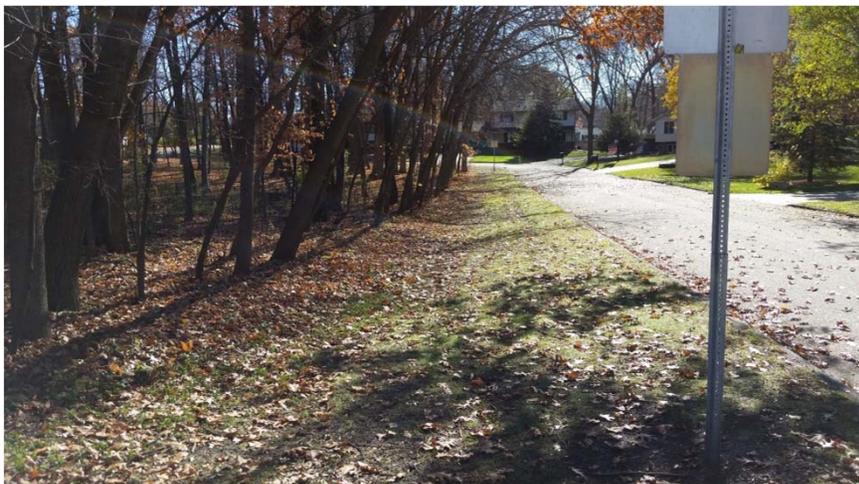


Photo 5 - View of the wooded area along the south side of the Property facing south



Photo 6 - View of the wooded area along the north side of the Property facing north



Photo 7 - View of distressed/dead grass and surface depressions at the northwest portion of the Property



Photo 8 - View of newly planted grass patches at the Property



Photo 9 - View of the park facing north



Photo 10 - Sewer clean outs at the north adjacent parcel

Appendix B
Historical Aerial Photographs

HIG Research Summary

Site Location

Pleasant Park Site - Tonka Bay
Pleasant Lane West & Pleasant Land East
Tonka Bay, MN

Conducted For

ERIS
80 Valleybrook Drive
Toronto, ON

HIG Project #

1523669

Date Created

11/04/2015



Historical
Information
Gatherers

This Research Summary identifies the products and services provided by Historical Information Gatherers, Inc. (HIG) for the above referenced site location. All products are provided as PDFs unless otherwise noted.

Historical Aerial Photographs

Aerial photographs of the site location were used to create a multi-page file named AerialPhotos. Each aerial photograph has a title block that includes the year and scale of the photograph as well as project information submitted at the time the order was placed. The years of coverage provided are listed below.

1937, 1940, 1947, 1953, 1957, 1964, 1969, 1979, 1984, 1991, 1997, 2003, 2008, 2013

Disclaimer & Waiver of Liability

This Research Summary and the related documents and images provided by Historical Information Gatherers (hereafter referred to as the "Site Specific HIG Data") contain information obtained from a variety of public and private sources. Additional information for the site and surrounding properties may exist. Accordingly, there can be no guaranty that the information provided is complete for its intended purpose. No warranty expressed or implied, is made whatsoever in connection with the Site Specific HIG Data. Historical Information Gatherers specifically disclaims the making of any such warranties, including without limitation, merchantability or fitness for a particular purpose. Historical Information Gatherers, its officers, employees and independent contractors cannot be held liable to anyone for any loss or damage, whether arising out of errors or omissions, negligence, accident or any other cause, resulting directly or indirectly from any information provided or any information not provided in the Site Specific HIG Data. Any liability on the part of Historical Information Gatherers is strictly limited to a refund equal to the amount paid for the Site Specific HIG Data.

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Pleasant Park Site - Tonka Bay
Pleasant Lane West & Pleasant Land
East
Tonka Bay, MN



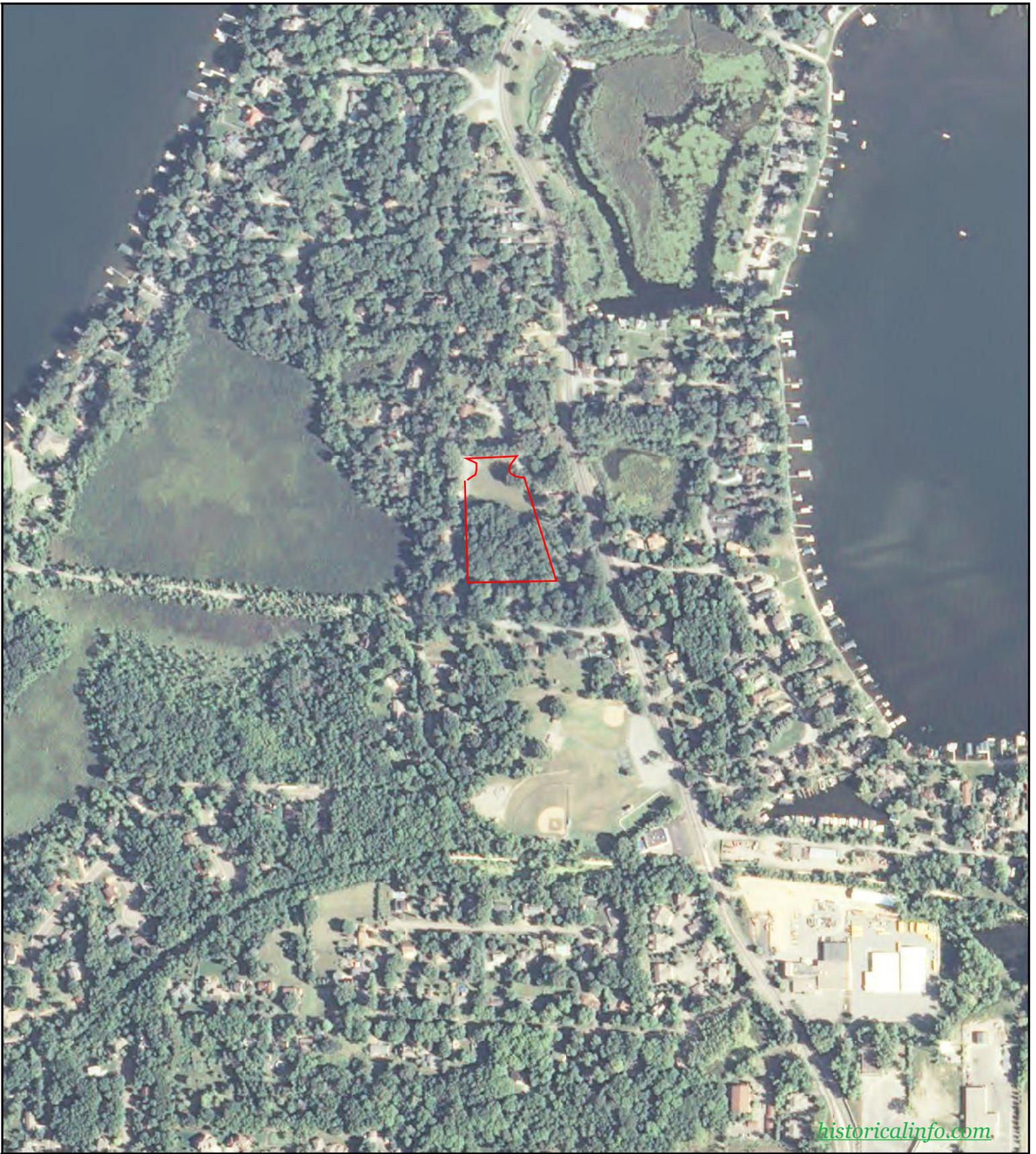
2013

HIG Project # 1523669

Client Project # 20151102056

Approximate Scale 1:6000 (1"=500')





Pleasant Park Site - Tonka Bay
Pleasant Lane West & Pleasant Land
East
Tonka Bay, MN



2008

HIG Project # 1523669

Client Project # 20151102056

Approximate Scale 1:6000 (1"=500')





Pleasant Park Site - Tonka Bay
Pleasant Lane West & Pleasant Land
East
Tonka Bay, MN



2003

HIG Project # 1523669

Client Project # 20151102056

Approximate Scale 1:6000 (1"=500')





Pleasant Park Site - Tonka Bay
Pleasant Lane West & Pleasant Land
East
Tonka Bay, MN



1997

HIG Project # 1523669

Client Project # 20151102056

Approximate Scale 1:6000 (1"=500')





Pleasant Park Site - Tonka Bay
Pleasant Lane West & Pleasant Land
East
Tonka Bay, MN



1991

HIG Project # 1523669

Client Project # 20151102056

Approximate Scale 1:6000 (1"=500')





Pleasant Park Site - Tonka Bay
Pleasant Lane West & Pleasant Land
East
Tonka Bay, MN



1984

HIG Project # 1523669

Client Project # 20151102056

Approximate Scale 1:6000 (1"=500')





Pleasant Park Site - Tonka Bay
Pleasant Lane West & Pleasant Land
East
Tonka Bay, MN



1979

HIG Project # 1523669

Client Project # 20151102056

Approximate Scale 1:6000 (1"=500')





Pleasant Park Site - Tonka Bay
Pleasant Lane West & Pleasant Land
East
Tonka Bay, MN



1969

HIG Project # 1523669

Client Project # 20151102056

Approximate Scale 1:6000 (1"=500')





Pleasant Park Site - Tonka Bay
Pleasant Lane West & Pleasant Land
East
Tonka Bay, MN



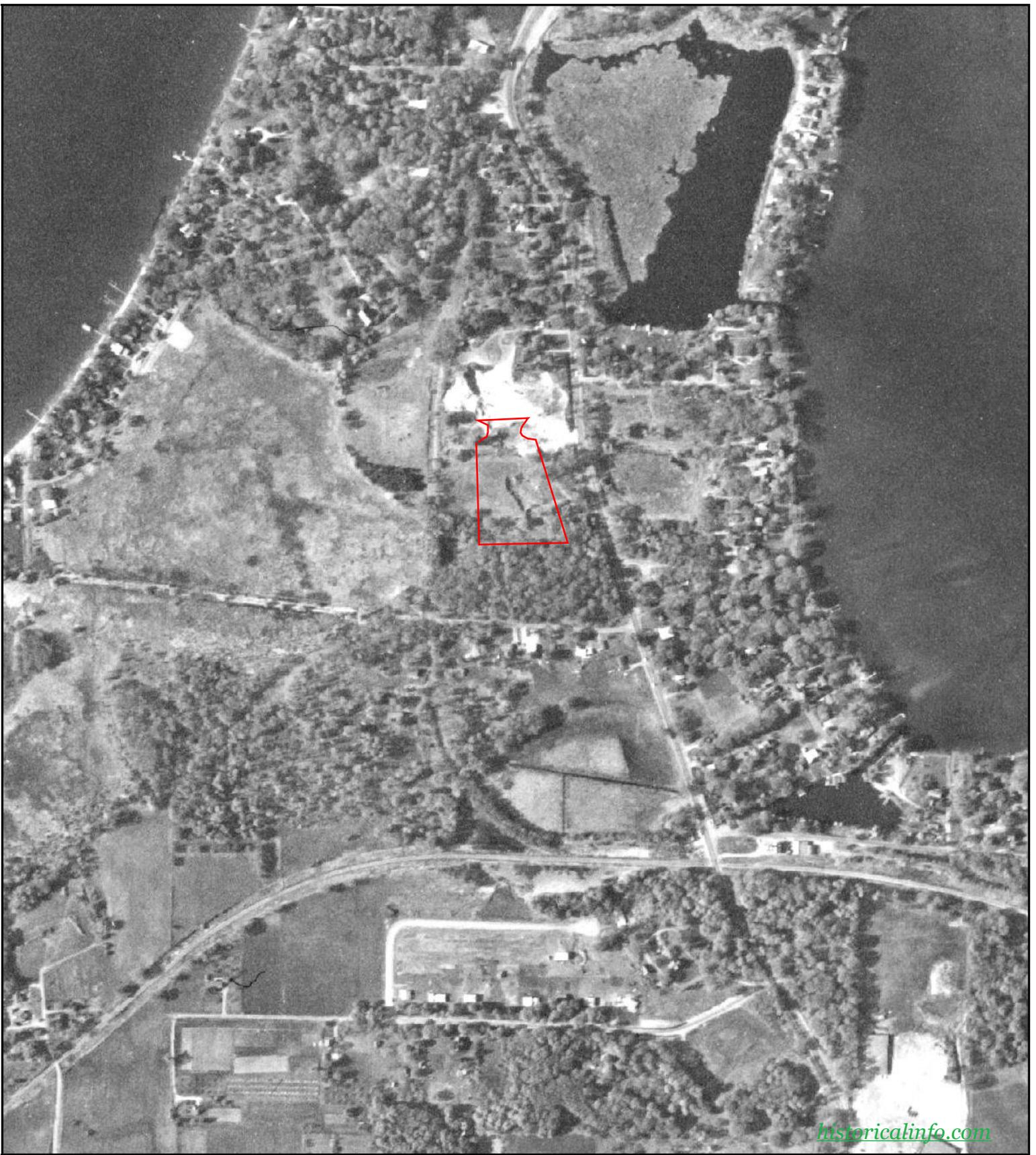
1964

HIG Project # 1523669

Client Project # 20151102056

Approximate Scale 1:6000 (1"=500')





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Pleasant Park Site - Tonka Bay
Pleasant Lane West & Pleasant Land
East
Tonka Bay, MN



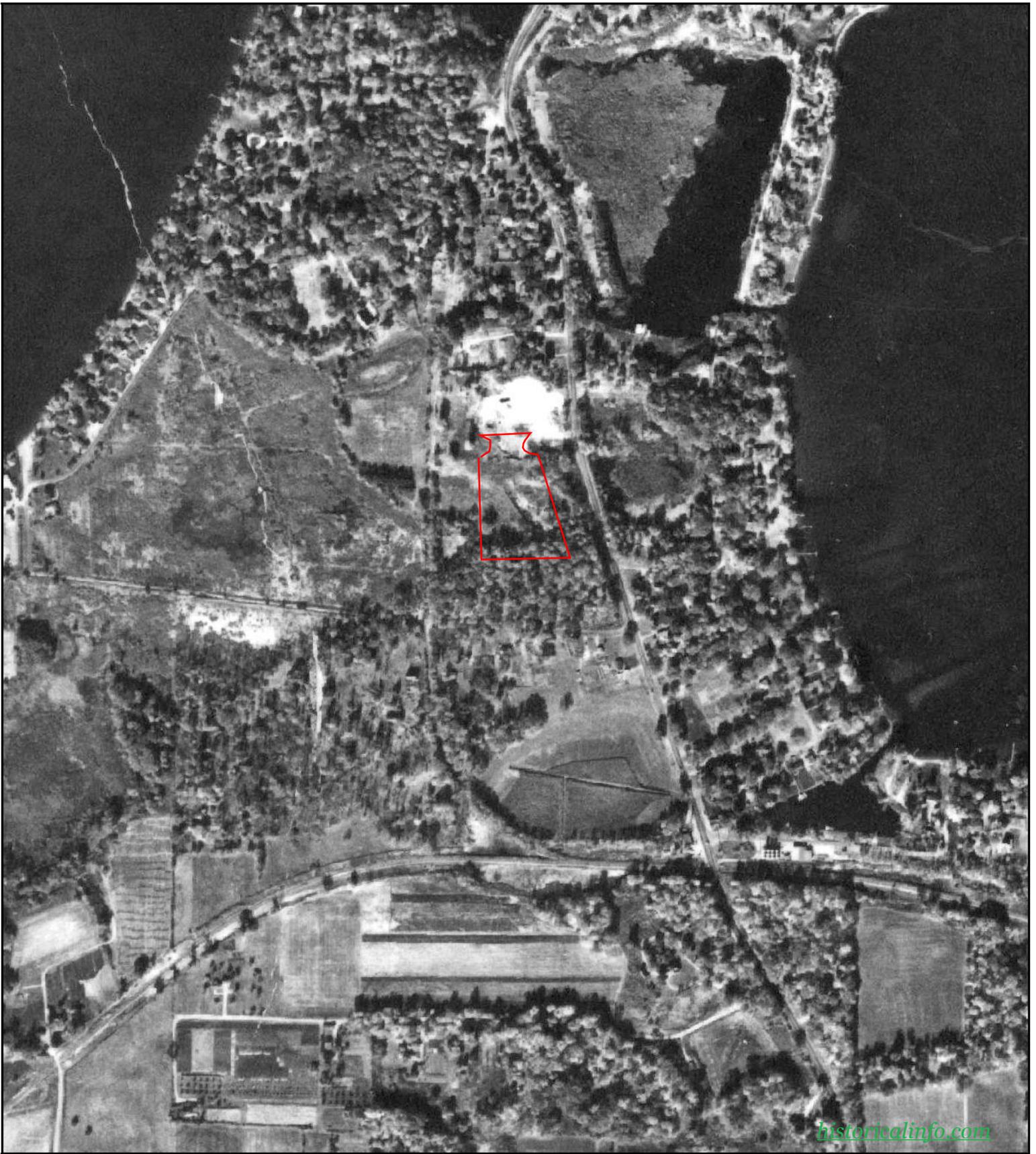
1957

HIG Project # 1523669

Client Project # 20151102056

Approximate Scale 1:6000 (1"=500')





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Pleasant Park Site - Tonka Bay
Pleasant Lane West & Pleasant Land
East
Tonka Bay, MN



1953

HIG Project # 1523669

Client Project # 20151102056

Approximate Scale 1:6000 (1"=500')





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Pleasant Park Site - Tonka Bay
Pleasant Lane West & Pleasant Land
East
Tonka Bay, MN



1947

HIG Project # 1523669

Client Project # 20151102056

Approximate Scale 1:6000 (1"=500')





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Pleasant Park Site - Tonka Bay
Pleasant Lane West & Pleasant Land
East
Tonka Bay, MN



1940

HIG Project # 1523669

Client Project # 20151102056

Approximate Scale 1:6000 (1"=500')





historicalinfo.com

Pleasant Park Site - Tonka Bay
Pleasant Lane West & Pleasant Land
East
Tonka Bay, MN



1937

HIG Project # 1523669

Client Project # 20151102056

Approximate Scale 1:6000 (1"=500')

