

GRAND RIVER FLOODWALLS HISTORIC EASEMENTS AND ASSET MANAGEMENT

IMAGIN CONFERENCE

JUNE 6, 2017

MICHELLE LAZAR, PE, GISP

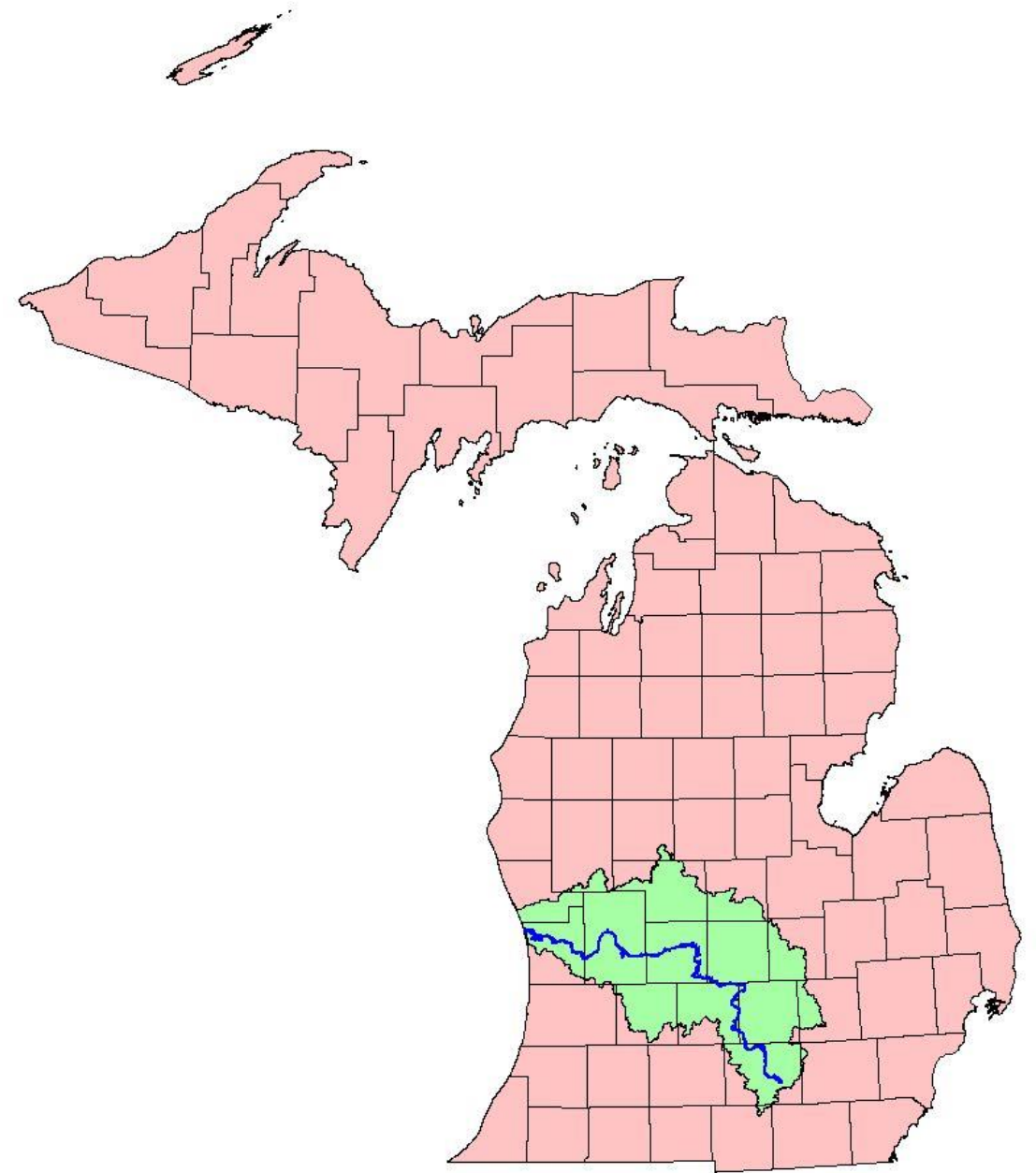


FISHBECK, THOMPSON, CARR & HUBER

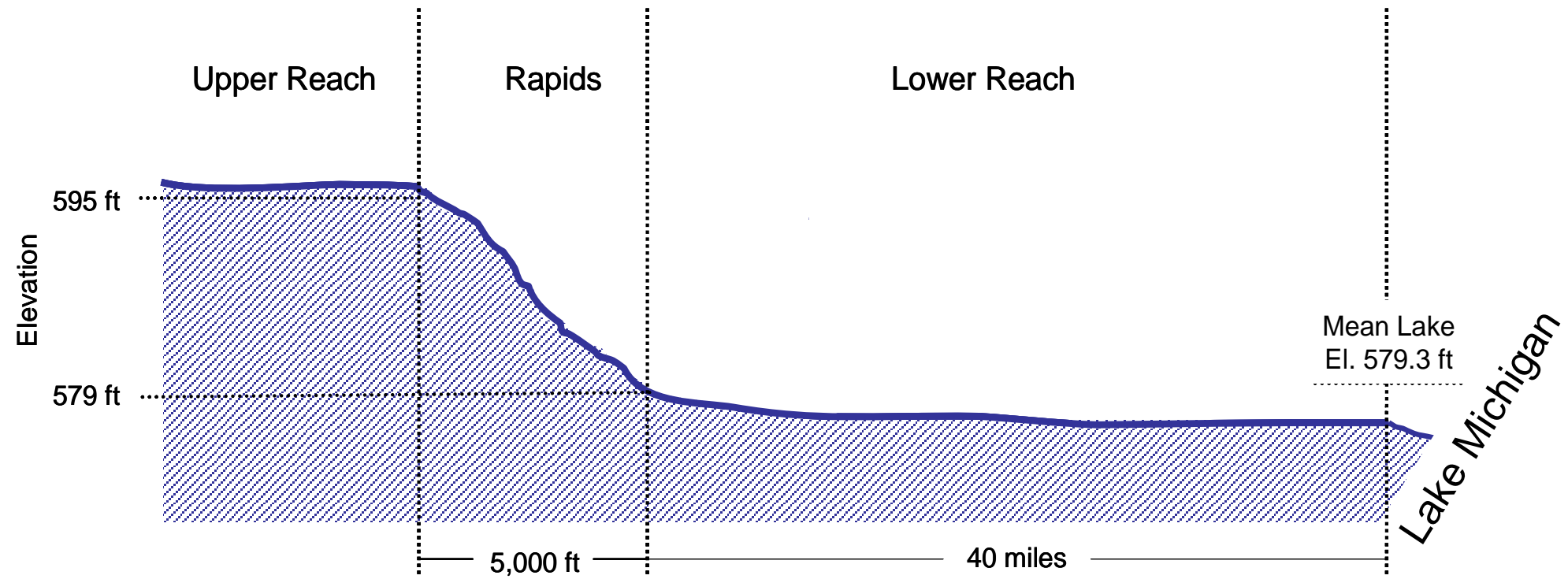
engineers | scientists | architects | constructors

THE GRAND RIVER

- ▶ Grand River
 - ▶ 270 miles from Jackson to Grand Haven
- ▶ Grand River Watershed
 - ▶ 5,660 square miles
- ▶ Land use
 - ▶ 53% agricultural
 - ▶ 27% urban
 - ▶ 20% forest



WHY ARE THERE "RAPIDS" IN GRAND RAPIDS?



1868



Chicago Lithographing Co. 152 & 154 Clark St. Chicago

73-693428

1 High School
2 Ward School
3 County Office
4 N.A.M.R.R. Depot
5 East Side
6 West Side } G.R.A.I.R.R. Depot
7 P. Baptists } Churches
8 M. Baptists }

9. *Congregationalist*
 10. *Dutch Reformed*
 11. *et Dutch Reformed*
 12. *Episcopal*
 13. *Catholic*
 14. *Hollander*
 15. *Lutheran*
 16. *et. Methodist*

} Church

Cherchez

GRAND RAPIDS

MICHIGAN 1868.

75 German Methodist
 23 1/2 Presbyterian
 29 1/2 Presbyterian
 20 Scandinavian
 11 Universalist
 22 Methodist
 13 Cemetery

(Over)

Division of Maps
FEB 28 1941
Library of Congress

G 4114
-G 5A3
1868
.R8
Aug 84

Drawn by A. Ruger

2016



MICHIGAN LEGISLATURE PUBLIC ACT 358 OF 1891

The permanent establishment of dock, safety, sanitary, and building lines along the... Grand River...within the City of Grand Rapids.

Property owners continued to fill in property along the Grand River (the railroad built a line along the river), narrowing the river and increasing risk of flooding.



USPS Property - 225 Michigan St. NW



The City of Grand Rapids makes no warranty, expressed or implied, regarding the accuracy, completeness, or timeliness of the information contained herein. Users of this information assume all liability for any errors or omissions.

GRAND RIVER FLOOD 1883

LOG JAMS



GRAND RIVER FLOOD 1883

LOG JAMS



GRAND RIVER FLOOD 1883

CITIZEN'S TELEPHONE CO. BUILDING



GRAND RIVER FLOOD OF 1904



FLOOD PROTECTION CONSTRUCTION 1907-1915 (FIRST ROUND)

1911 Floodwall Construction

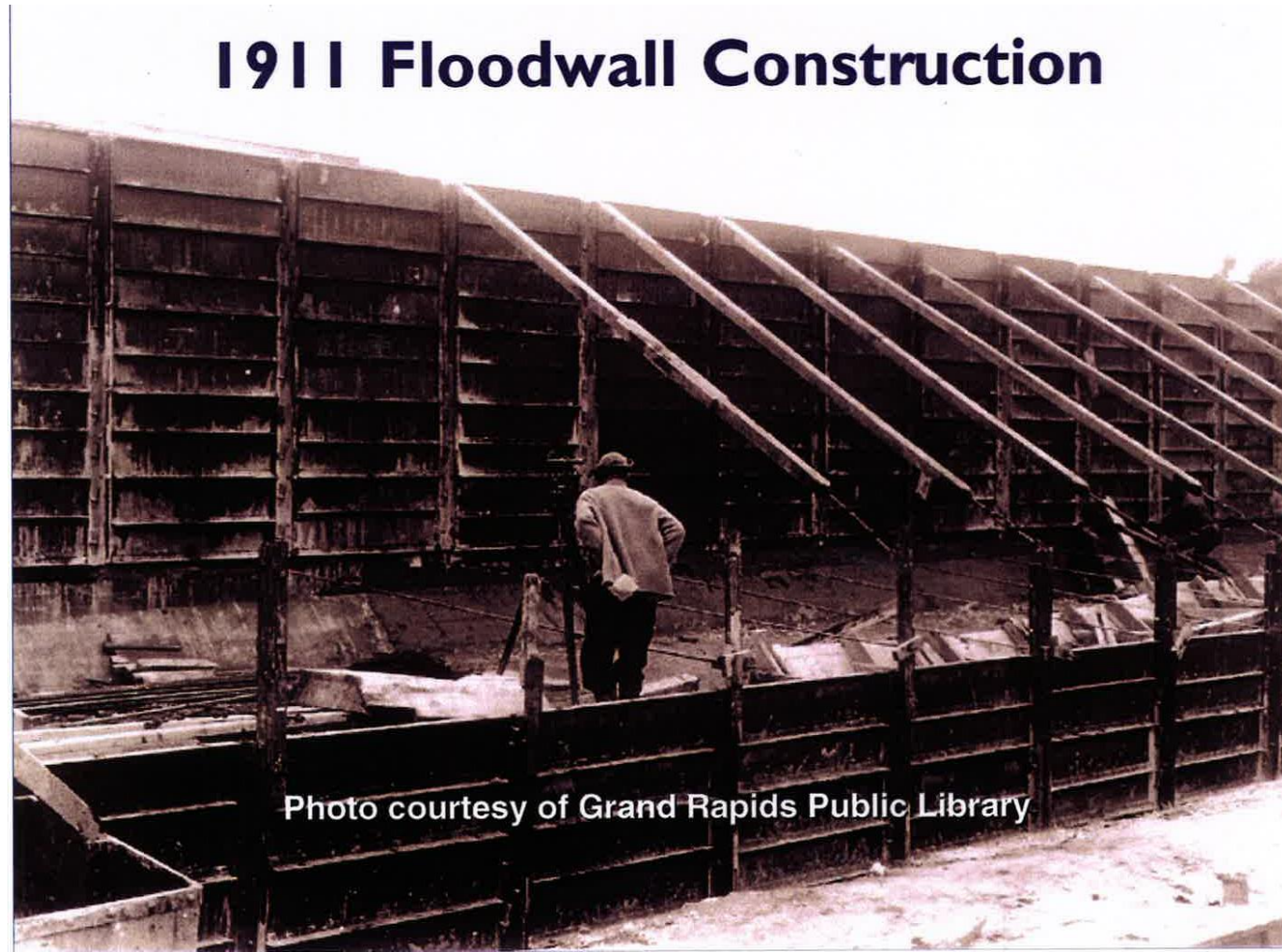
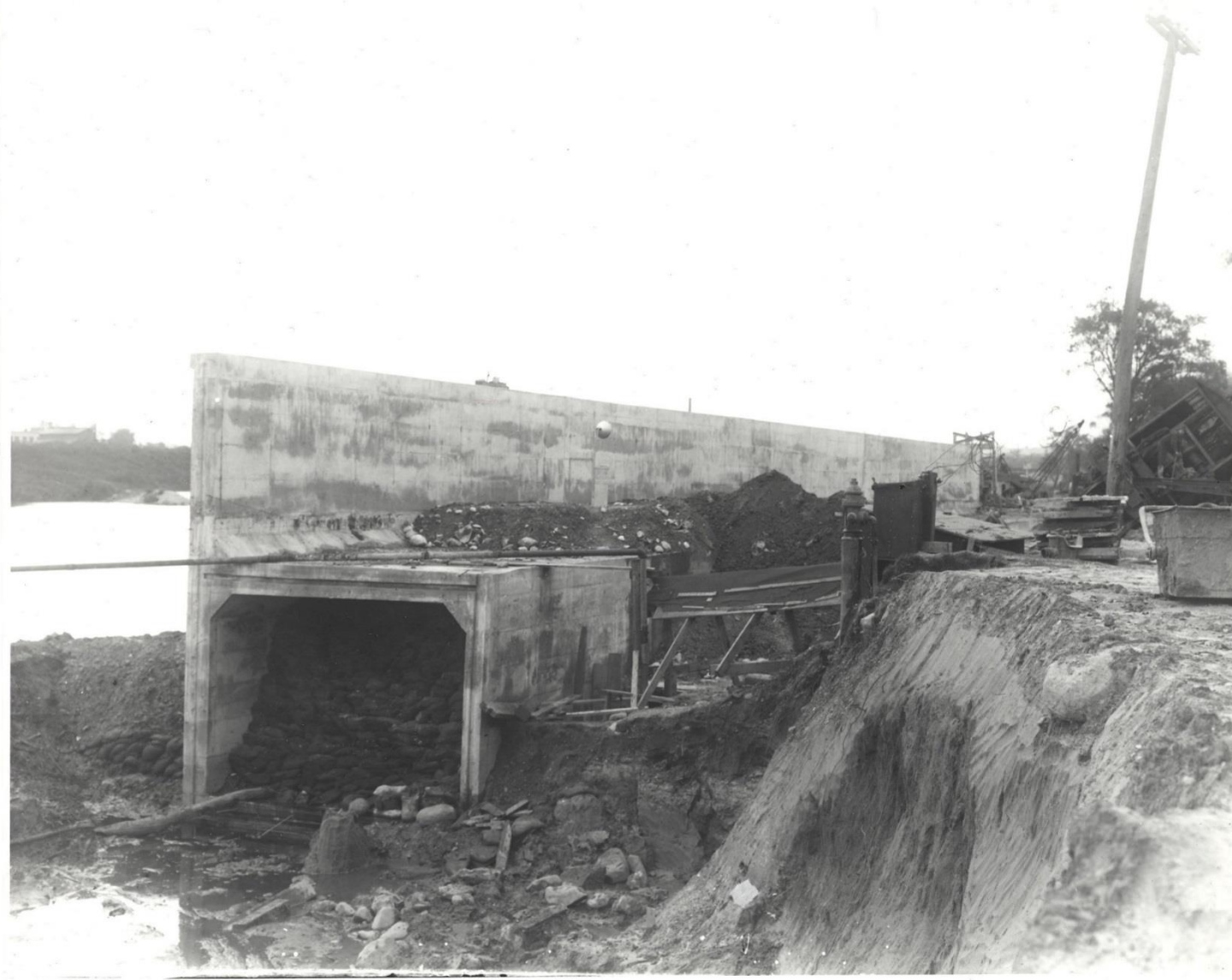


Photo courtesy of Grand Rapids Public Library



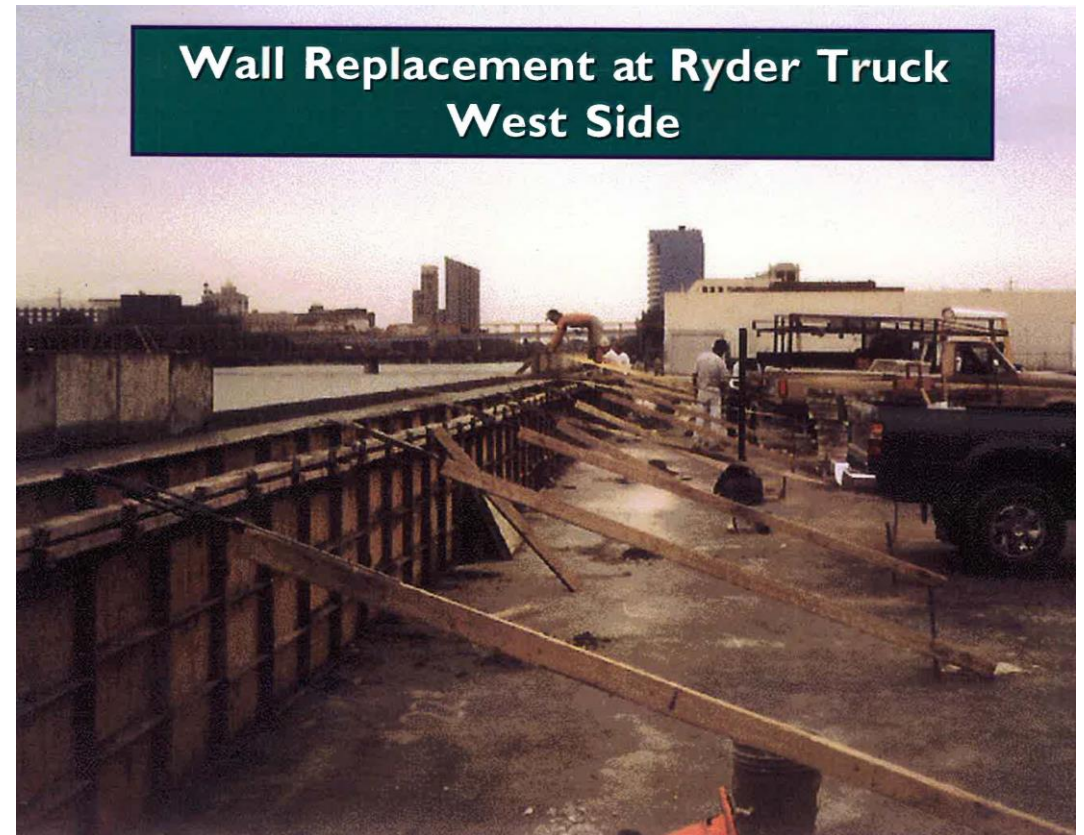
Out of concern over installing a trunk sewer in Market Avenue, the City installed the sewer along the dockline wall. (12' x 13' box)

FLOOD PROTECTION CONSTRUCTION 1997-2003 (SECOND ROUND)

- Raise flood protection system to 1' above the 100-year flood elevation (1982 FEMA model).
- Everyone has federal flood insurance.
- Everyone is happy.



- Freeboard improvements
- Backflow protection
- Interior drainage and pump stations
- Wall rehabilitation



2013



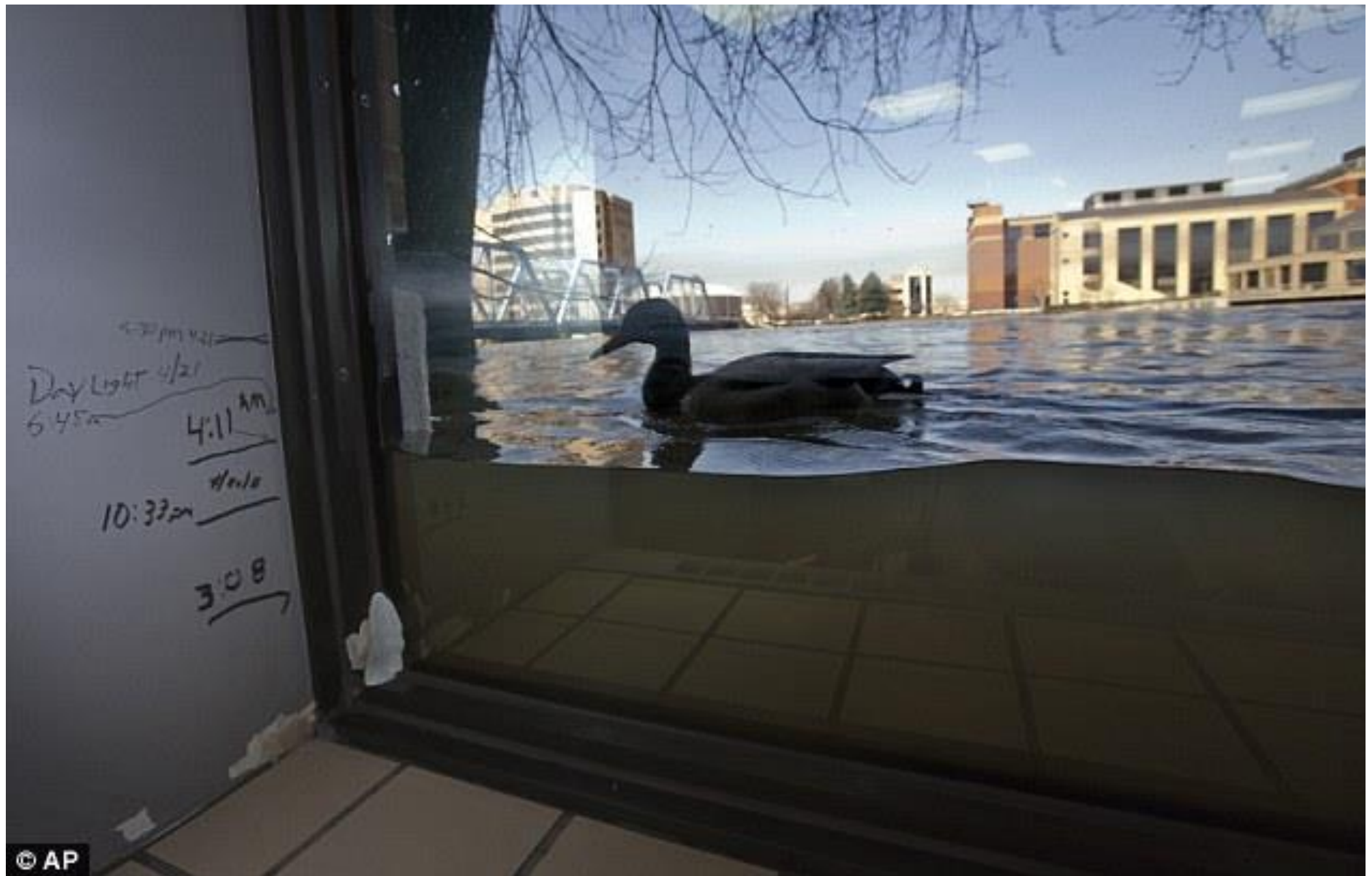
PUBLIC MUSEUM



GVSU EBERHARD CENTER









Grantor(s)	East/West of River	D of Inst., D Rec.	Liber and Page Number
James J. McKee, Oscar E and Eva F Belden	East	5/28/1910, 7/27/1910	Liber 15 Misc Pg 118-121.
Parcel 3 Description?			(all below Misc)
Raul Kempter, William and Nellie S Schmitt	east	10/4/1910, 5/3/1910	Liber 16 Misc Pg 615
Wilmarth & Vorman co.	East	1/28/1908, 5/3/1910	Liber 16 Misc Pg 618
Robert and Elizabeth Milne	East	2/10/1908, 5/3/1910	Liber 16 Misc Pg 611
Mary J Fallass	east	5/8/1908, 5/3/1910	Liber 16 Misc Pg 614
Peter Melpolder	east	3/27/1908, 5/3/1910	Liber 18 Misc Pg 613-14
Lucinda Sprague	East	7/31/1909, 5/3/1910	Liber 16 Misc Pg 615-16
Martinea C. Vander Stolpe	East	2/26/1908, 5/3/1910	Liber 16 Misc Pg 612-13
Truman M and Elizabeth Smith	East	2/10/1908, 5/3/1910	Liber 16 Misc Pg 611-12
Charles Band Mary A Kelsey	East	3/18/1908, 4/27/1910	Liber 16 Misc Pg 603-04
Loova A Rankville	East	8/27/1908, 4/27/1910	Liber 16 Misc Pg 607-08
Citizens Telephone Company CF Rood, President EB Fisher, Secretary	East	8/28/1908, 4/27/1908	Liber 18 Misc Pg 608-07
Grand Rapids & Indiana Railway Company JHP Hughtart, Vice-Pres. General Manager RR Metheary, Secretary Margaret R McConnell	East	5/1/1908, 4/27/1910	Liber 16 Misc Pg 604-06
Fred H and Elsie Hirth	East	5/13/1908, 4/27/1910	Liber 16 Misc Pg 606
Nelson/Metter Furniture Company Willard Bernhart, President	East	11/30/1908, 4/27/1910	Liber 16 Misc Pg 602-03

Robert D. Graham, Trustee RoW for Dock Line	East	1/15/1909, 4/27/1910	Liber 16 Misc Pg 602
N Fred and Annie B Avery	East	11/6/1908, 4/27/1910	Liber 18 Misc Pg 601
William C and Frankie M Hopson, Hubert and Jennie Hattenkamp	East	(none), 4/27/1910	Liber 18 Misc Pg 599-800
William and Mary J Maner	East	12/30/1907, 5/3/1910	Liber 18 Misc Pg 619
Grand Rapids Terminal RR Company AB Atwater, President	East	1/10/1908, 5/3/1910	Liber 18 Misc Pg 617
Michigan Trust Company, Trustee under the will of Sarah Stanton, deceased, Frederick A Gorham, Third Vice President	East	3/27/1908, 4/27/1910	Liber 18 Misc Pg 597
Henry and Klasciena Tiedens, Sikko and Johanna Tiedens	East	2/3/1910, 3/27/1910	Liber 16 Misc Pg 575
Jan and Lena Vynland	West	6/18/1910, 7/27/1910	Liber 387 Deeds Pg 20
Andrew and Kindriena Hock	West	8/28/1910, 7/27/1910	Liber 387 Deeds Pg 20
Charles Band Lydia S Timmer	West	6/18/1911, 7/27/1910	Liber 387 Deeds Pg 20
Louis F and Maria Sunlin	West	6/22/1910, 7/27/1910	Liber 378 Deeds Pg 30
William A and Rebecca Timmer	West	6/18/1910, 7/27/1910	Liber 387 Deeds Pg 19
John C Conner	West	6/18/1910, 7/27/1910	Liber 387 Deeds Pg 20
Charlotte C Luce	West	6/25/1908, 1/28/1910	Liber 16 Misc Pg 542
Gerritt J. Kollen, Charlotte Nelson Maynard	West	8/1/1908, 1/28/1910	Liber 17 Misc Pg 544
Kent State Bank Henry Lemon, Pres	West	3/12/1909, 1/28/1910	Liber 16 Misc Pg 543

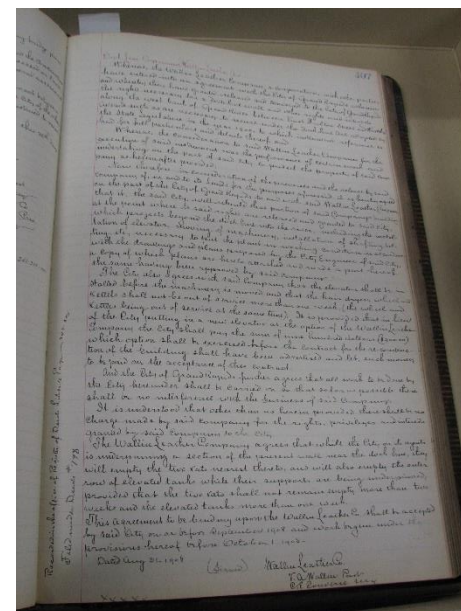
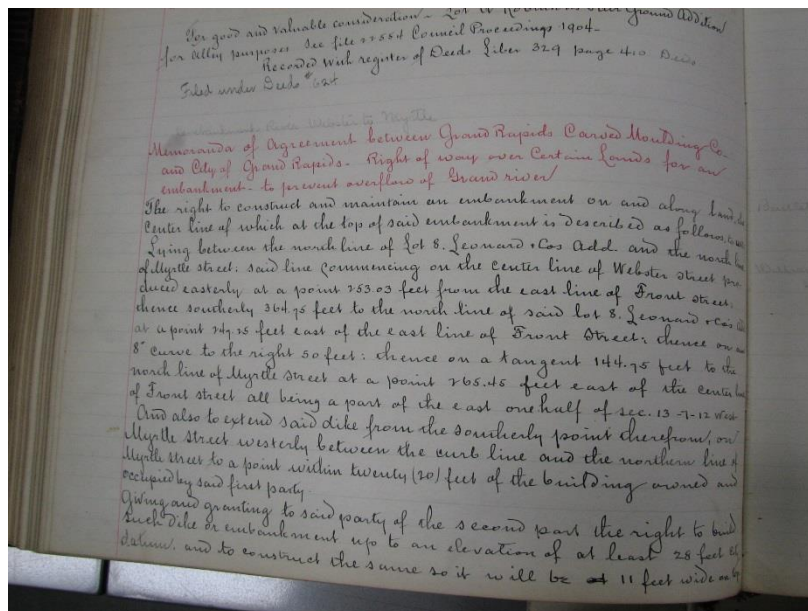
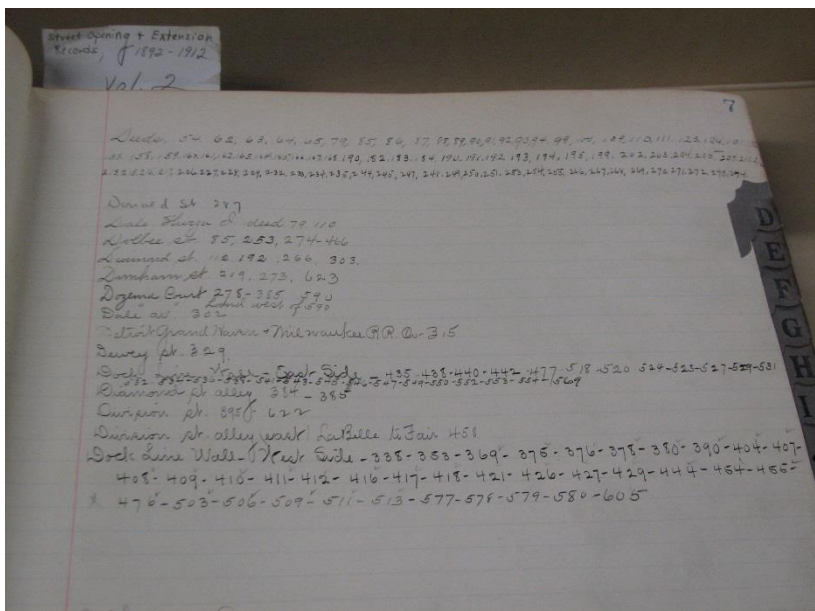
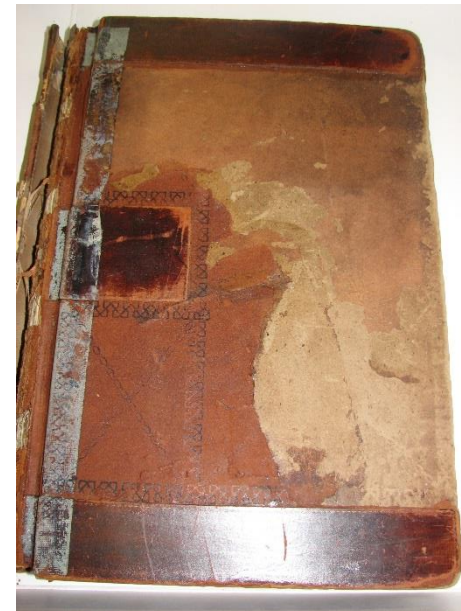
Walton and Julia L Ferguson	West	10/28/1909, 1/28/1910	Liber 16 Misc Pg 547-48
Grand Rapids-Muskegon Power company WA Foster, Vice Pres George L. Erwin, Secretary	West	10/11/1909, 1/28/1910	Liber 16 Misc Pg 550-52
Strange Parcel			
Charles B and V Blakeslee	West	7/10/1908, 1/28/1910	Liber 18 Misc Pg 543
Singleton L King	West	11/29/1912, 1/6/1913	Liber 411 Deeds Pg 258
Mrs. Minnie Dykema	East	2/4/1910, 3/2/1910	Liber 18 Misc Pg 576-77
Daniel W Colt, Estate Clara M Colt, Clark H Gleason	East	7/10/1908, 12/3/1908	Liber 354 Deeds Pg 74-75
John Widdicombe and Wife	West	10/3/1904, 12/16/1904	Liber 14 Misc Pg 514-15
Paulina Victor	West	8/4/1905, 2/8/1907	Liber 351 Deeds Pg 70-71
Paulina Victor	West	6/11/1907, 6/19, 1907	Liber 16 Misc Pg 168
Cornelius and Dina Goudzewaard (also another dead)	West	6/11/1907, 6/19/1907	Liber 16 Misc Pg 187-88
Frances Whitney	West	8/4/1905, 2/8/1905	Liber 351 Deeds Pg 69 All below deeds unless otherwise stated
Mark and Cornelia A Harris	West	7/31/1905, 2/8/1907	Liber 351 Deeds Pg 64
Gertie A Cummings	West	11/6/1905, 2/8/1907	Liber 351 Deeds Pg 81-82
James and Mary McDermont	West	8/14/1905, 2/8/1907	Liber 351 Deeds Pg 74
Jerry H. Anderson, Alice Anderson	West	8/5/1905, 2/8/1907	Liber 351 Deeds Pg 72-73
Edmund A and Anna Worfel	West	8/17/1906, 2/8/1907	Liber 351 Deeds Pg 75
Margaret Oni	West	9/1/1905, 2/8/1907	Liber 351 Deeds Pg 77
Ernest R and Emma Hall	West	8/11/1905, 2/8/1907	Liber 351 Deeds Pg 73-74

Johanna Ryan	East	11/8/1906, 11/28/1906	Liber 351 Deeds Pg 88
Mrs J Schulte	West	2/19/1906, 2/8/1907	Liber 351 Deeds Pg 79-80
Charles and Uzzie Ellet	West	9/17/1906, 2/8/1907	Liber 351 Deeds Pg 78-79
JF and Anna Haesthutter	West	9/12/1905, 2/8/1907	Liber 351 Deeds Pg 77-78
A Charles Greiner	West	9/1/1905, 2/8/1907	Liber 351 Deeds Pg 76
Alex W. Buchanan	West	8/4/1905, 2/8/1907	Liber 351 Deeds Pg 70
Tiedens (Superceded)			
Emma Field	West	8/5/1905, 2/8/1907	Liber 351 Deeds Pg 65-86
Ida L. Rosenberg	West	8/7/1905, 2/8/1907	Liber 351 Deeds Pg 67-88
William Laban	West	8/7/1905, 2/8/1907	Liber 351 Deeds Pg 66-67
David P Ransom, Jane Ransom	West	8/5/1905, 2/8/1907	Liber 351 Deeds Pg 63
Albert Stonehouse	West	8/20/1905, 2/8/1907	Liber 351 Deeds Pg 80-81
Cornelius and Dina Goudzewaard (also orange)	West	9/19/1905, 2/8/1907	Liber 351 Deeds Pg 68-69
Nellie Gormley	West	8/4/1905, 2/8/1907	Liber 351 Deeds Pg 71-72
Charles De Lang	West	6/15/1911, 7/19/1911	Liber 15 Misc Pg 322-23
James Bayne et al	West	10/1/1907, 8/3/1908	Liber 351 Deeds Pg 574-75
AH Scrwood et al	West	10/1/1907, 8/3/1908	Liber 351 Deeds Pg 575-76
WM T Powers	West	11/25/1907, 8/3/1908	Liber 351 Deeds pg 576-77
Fox Typewriter company WR Fox, President	West	4/25/1908, 8/3/1908	Liber 351 Deeds Pg 578-79
The Henry J Hartman Foundry Company Henry Harman, Pres John Link, Secy	West	6/22/1908, 10/29/1908	Liber 16 Misc Pg 344

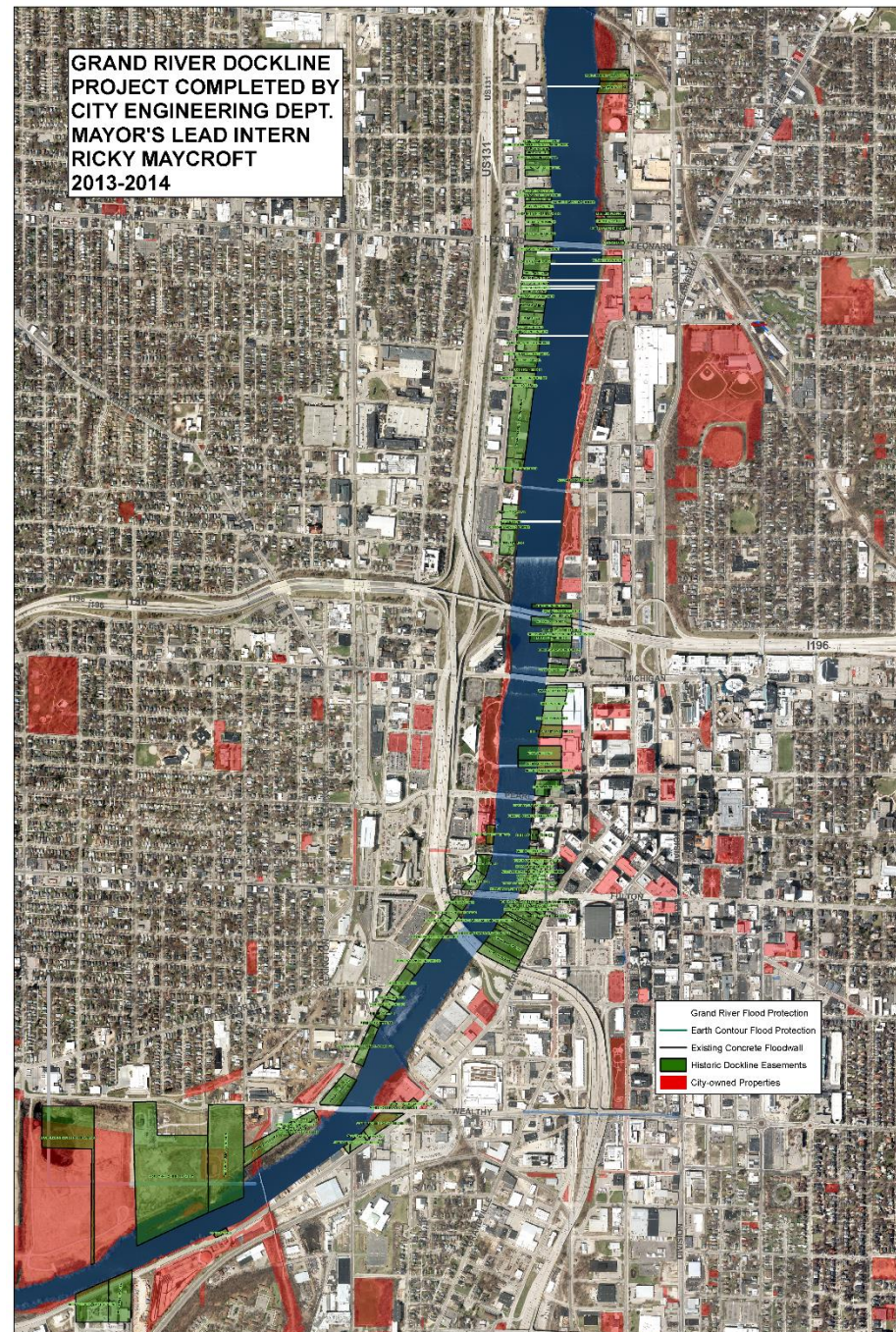
Wallin Leather company VA Wallin, Pres CE Converse, Secy	?	3/6/1909, none given	None given
Wallin Leather Company VA Wallin, Pres CE Converse, Secy	West	8/31/1908, 10/29/1908	Liber 16 Misc Pg 343-44
Converse and Chick and Grand Rapids Manufacturing Company Costello C Converse Isaac W Chick, executor Will F Chick	West	2/29/1908, 10/29/?	Liber 18 Misc Pg 347-48
Pere Marquette RR Company WM Cotter, Pres. JA Howard Secy.	West	3/17/1908, 10/29/1908	Liber 18 Misc Pg 349-51
F Emery and Ada L Tuttle	West	7/13/1908, 10/29/1908	Liber 16 Misc Pg 346
Fourth St ME Church Jno. H. Woodburn, Pres. Bd. Of Trustees JP Overholser, Treas. Bd. Of trustees Samuel Wetzel, AC Randall, Rea Fraser, Chas. H. Auerle, John Wager (trustees)	West	3/24/1908, 10/29/1908	Liber 18 Misc Pg 348-49
Edgar S. Kiefer	West	6/14/1908, 10/29/1908	Liber 16 Misc Pg 351-52
Grand Rapids Coopersge company John Frezer, Pres. Francis JJA Klein, Secy.	West	1/28/1908, 10/29/1908	Liber 18 Misc Pg 344-45
CS Paine Co Ltd. CS Paine, Chairman WM H Gay, Treasurer	West	11/2/1908, 12/3/1908	Liber 16 Misc Pg 366-67
Grand Rapids Ry Co Lester J. Ringds, Vice Pres.	West	2/10/1909, 6/8/1909	Liber 16 Misc Pg 458-60
Colt Estate Clara M Colt Amenril Colt, and Clark H Gleason, Executors of the last will and estate of Charles W Colt, deceased. Clara M Colt	West	7/7/1908, 2/24/1909	Liber 16 Misc Pg 401-03

Edward W Haines and Clark H Gleason as administrators de bonis non with the will annexed of the estate of Daniel W Colt, deceased Elizabeth C haines			
Michigan Trust Company, Receiver of the Grand Rapids Felt Rort Company Frederick A Gorham, third vice-pres. George Hefferan, Secy.	West	4/1/1908, 2/24/1909	Liber 354 of Deeds Pg 154-59
Wegemater Furniture Company Isaac Wegemater, Chairman Hichy Dykema, Vice Pres.	East?	7/7/1908, 2/24/1909	Liber 18 Misc Pg 403-04
Cornelius A, Clara Vander Wier to Gerard Hoeksma	?	10/21/1885, none given	?
Gerard, Martje Hoeksma	?	11/22/1889, none given	?
Harry L. Mary Reinhart	East?	2/18/1911, 3/11/1911	Liber 390 Deeds Pg 387

The intern! 2013-2014, researched City archives, common council records, register of deeds, etc. and identified all historic dockline documents. Created GIS polygons for each historic parcel.



GRAND RIVER DOCKLINE
PROJECT COMPLETED BY
CITY ENGINEERING DEPT.
MAYOR'S LEAD INTERN
RICKY MAYCROFT
2013-2014



FLOOD PROTECTION CONSTRUCTION 2015-2017 (THIRD ROUND)



- Post Katrina- Raise Flood Protection System from 1' to 3' above the 100-year flood elevation. If not, homeowners would lose federal flood insurance.
- This is unreasonable.



- Compromised reached in 2015.
- Freeboard improvements.
- Backflow protection.
- Wall rehabilitation.
- Asset management plan.

GRAND RIVER RESTORATION PROJECT

- ▶ Habitat enhancement
 - ▶ 12 acres of limestone bedrock shoals for sturgeon spawning
 - ▶ 5 times the increase in species diversity
- ▶ Recreational enrichment
 - ▶ 2.5 miles of drift boating reach, downstream passage of paddle and oar boats
 - ▶ 400 meters of International Canoe Federation local merit slalom course
- ▶ Aesthetic improvements
 - ▶ 2 new riverside parks
 - ▶ 4 acres of native riparian forest



RESTORE THE RAPIDS



ARCMAP DEMO

- Follow up by City
 - Published services for AGOL
 - Simplified access for managers through web map
 - Field access
- Next steps
 - Create inspection forms
 - Survey 123 vs. Collector

THANK YOU



FISHBECK, THOMPSON, CARR & HUBER
engineers | scientists | architects | constructors