

# NASH CREEK INTERCOUNTY DRAIN

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## Meeting for the Determination of Necessity

MDARD – Brady Harrington  
Kent County – Ken Yonker  
Ottawa County – Joe Bush

March 23<sup>rd</sup> , 2022

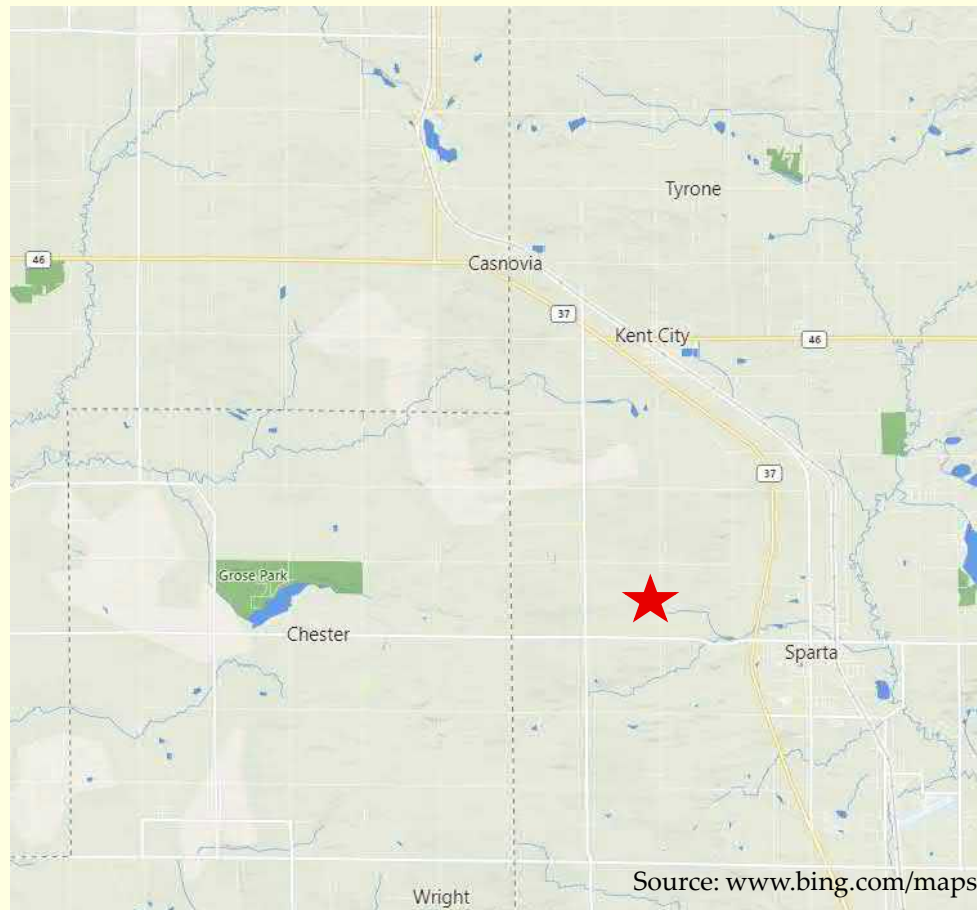


# Outline

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- Location
- Background/History
- Drainage District Boundary
- Site Conditions/Inspection
- Design Alternatives
- Questions

# Location Map



Add the entire district boundary. Leave the background still as a roads map. I think an aerial would make it too cluttered. Maybe same map as a couple slides down, just aerial off and the district line very faint and lightly filled with a transparent gray (but still present)

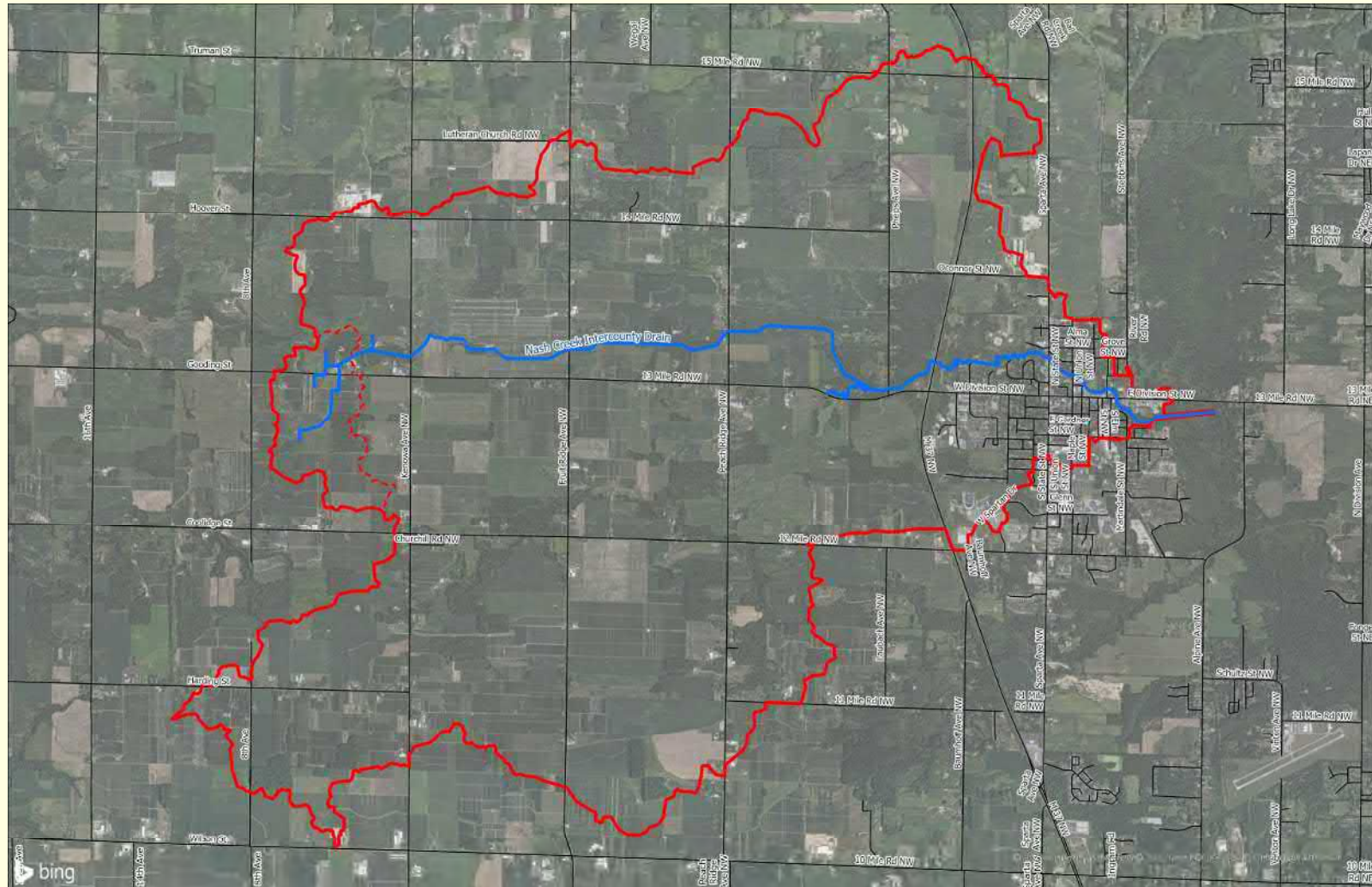
# Background/History

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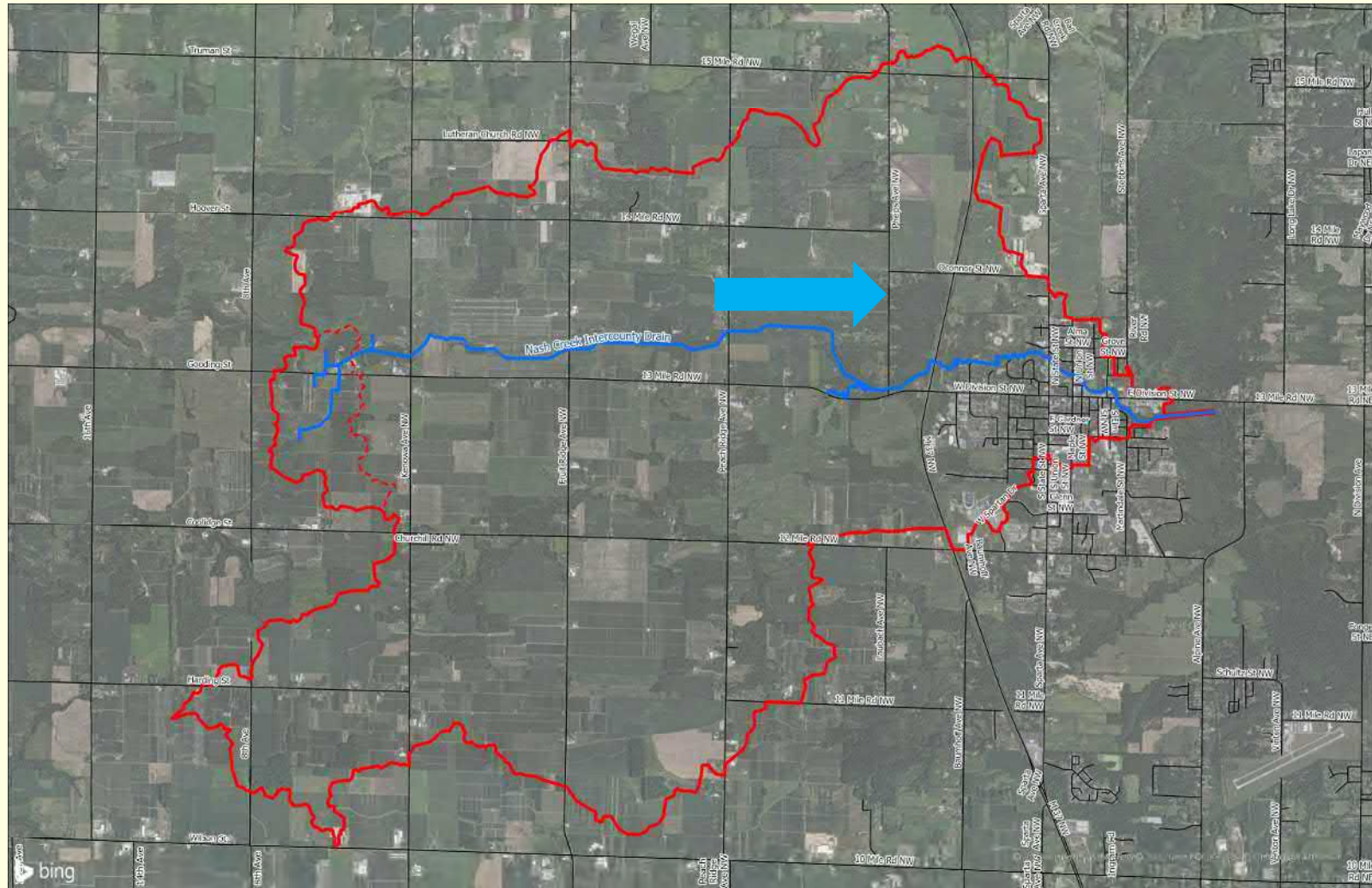
- Petition for Maintenance and to Consolidate Drains
- Watershed: ~10,776 Acres/16.84 Sq. Mi.
- ~2,090 Parcels
- Drain Length: 43,637 Ft. / ~8.3 Mi.
- Land Use: Agricultural, Forested, & Urbanized



# Watershed Boundary



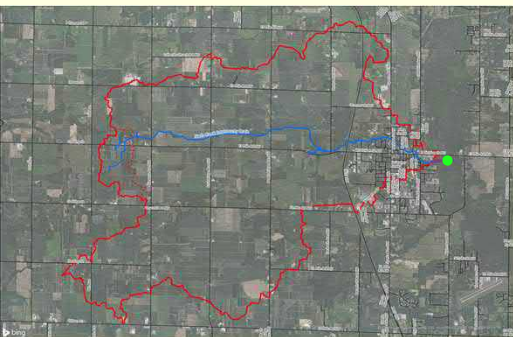
# Drain Flow Direction





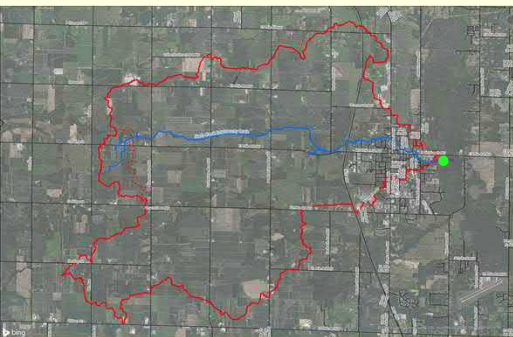
# Woody Debris Downstream of E Division Street.

For the maps below, make the aerial more transparent. Thicken the district line. Make the green dot just a bit bigger. Or even zoom in closer so people can see the green dot relative to streets they'd know. I don't think we need to show the whole district.



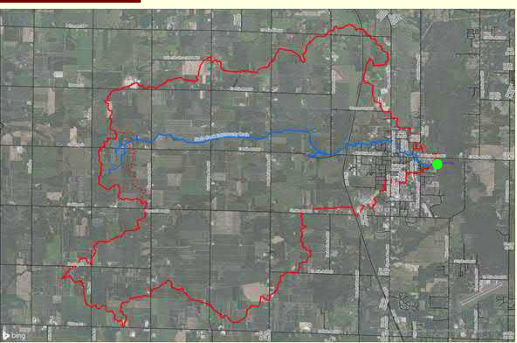


Erosion  
Downstream of  
E Division Street.



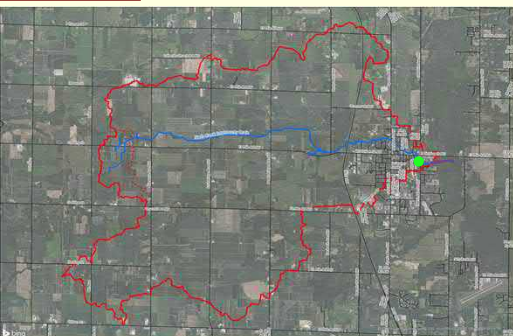


Woody Debris  
Downstream of  
E Division Street.



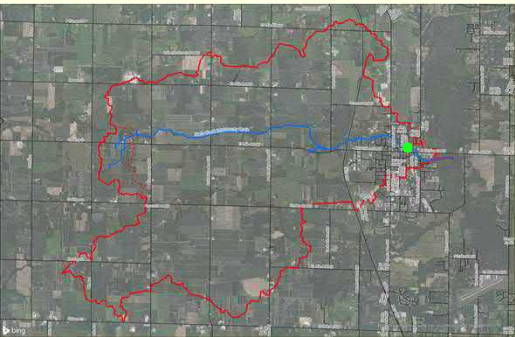


Sediment Bar  
Downstream of  
E Division Street.



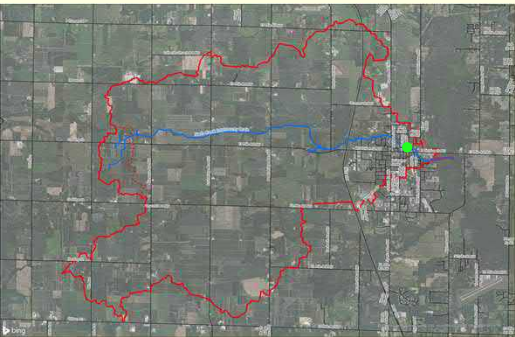


# Log Jam and Sediment Bar at Railroad Crossing.



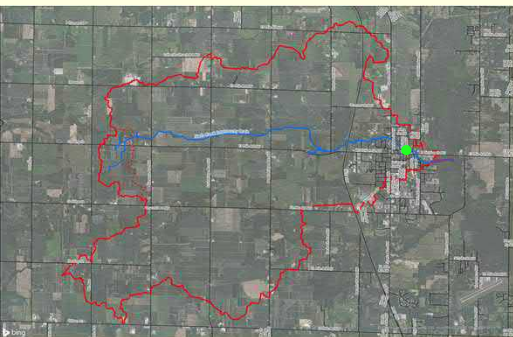


# Concrete Pad Upstream of Railroad Bridge.





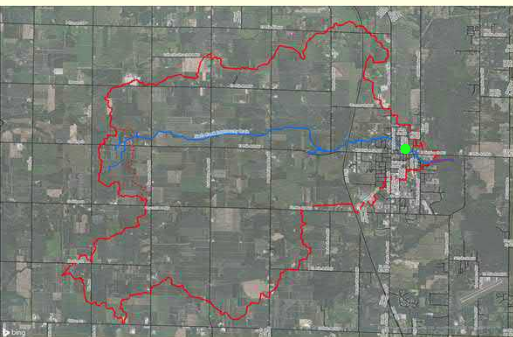
# Erosion Upstream of Railroad Bridge.





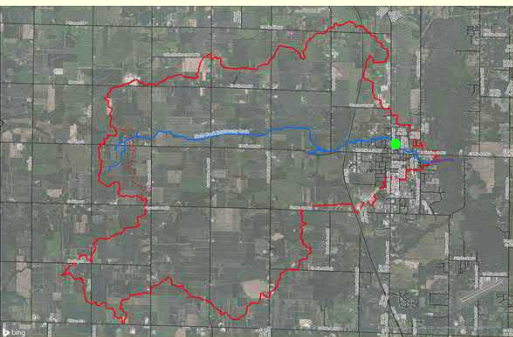
# Debris Upstream of Railroad Bridge.

I don't think this photo shows a real big problem. This stretch is more characterized by bank erosion in and around the concrete that was poured or placed on the slopes.



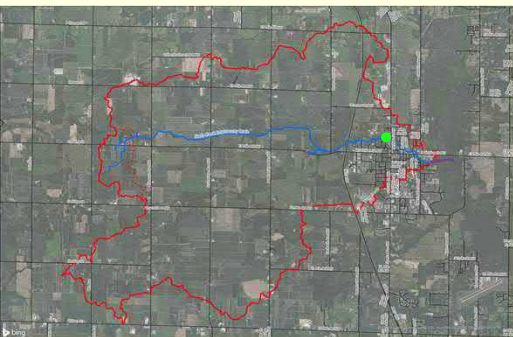


# Woody Debris Downstream of N State Street.



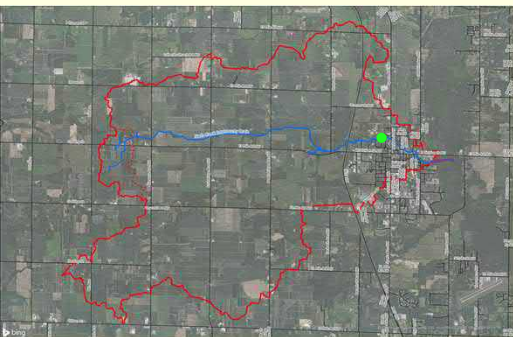


Log Jam  
Upstream of N  
State Street.



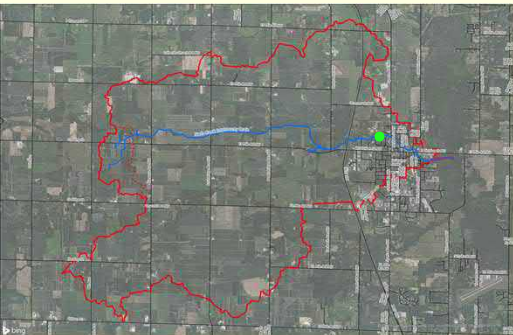


# Sediment Island Upstream of N State Street.



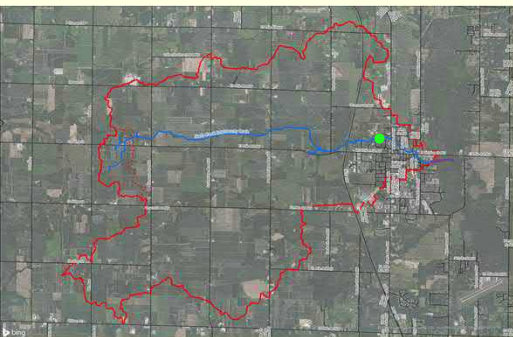


# Log Jams Upstream of N State Street.



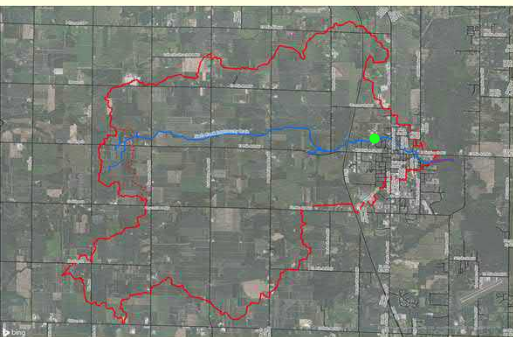


# Erosion and Log Jam Upstream of N State Street.



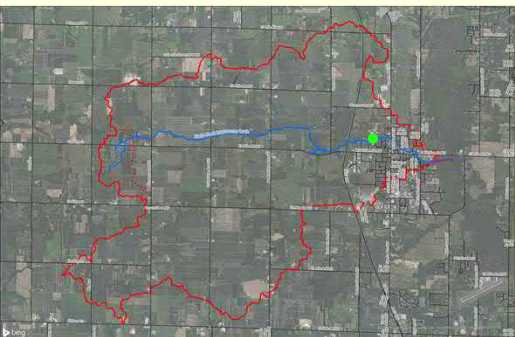


# Log Jam/Sediment Bar Upstream of Luru Lane.





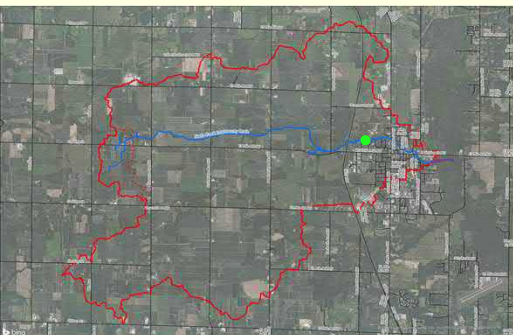
# Erosion Upstream of Luru Lane.





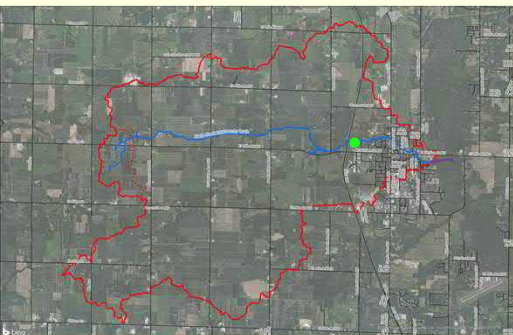
# Inline Pond Downstream of Ecklund Street.

Do we have any photos or comments regarding the sediment bar?



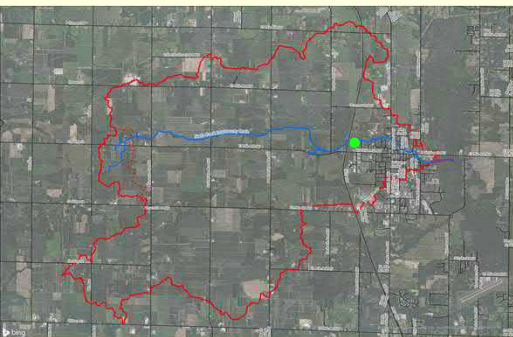


# Sediment Island Downstream of M-37.



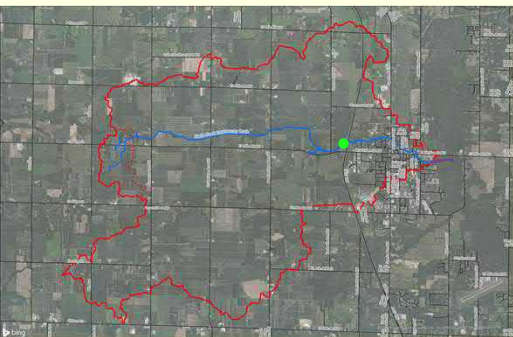


# Log Jams Downstream of M-37.



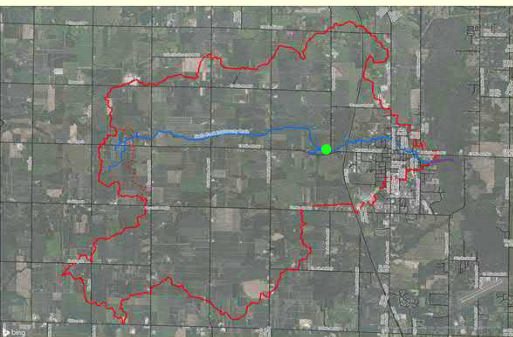


# Erosion Upstream of M-37.



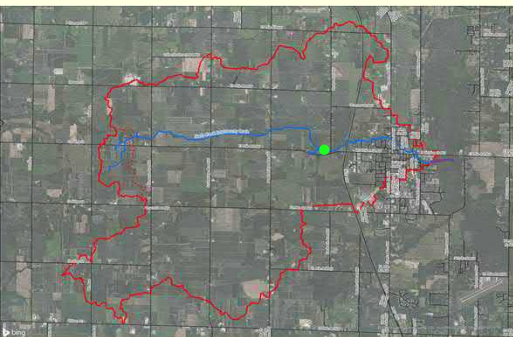


# Erosion Upstream of Phelps Avenue.



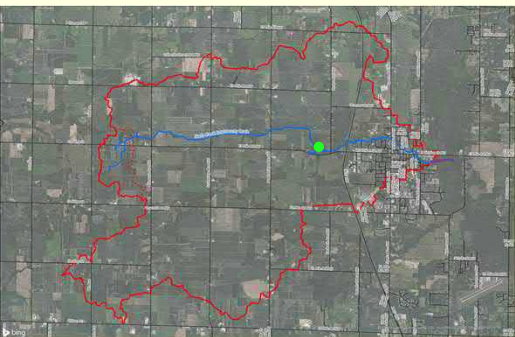


Log Jams  
Upstream of  
Phelps Avenue.



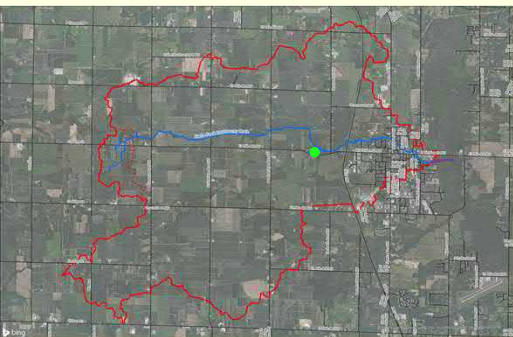


# Erosion Upstream of Phelps Avenue.



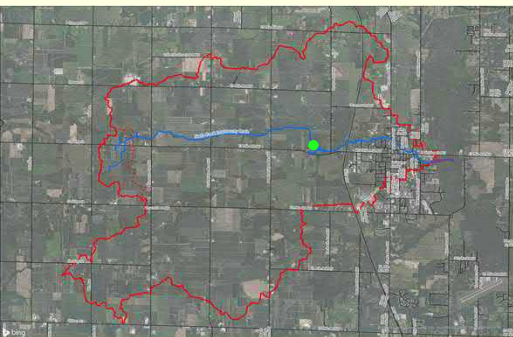


# Erosion on Branch Upstream of Phelps Avenue.



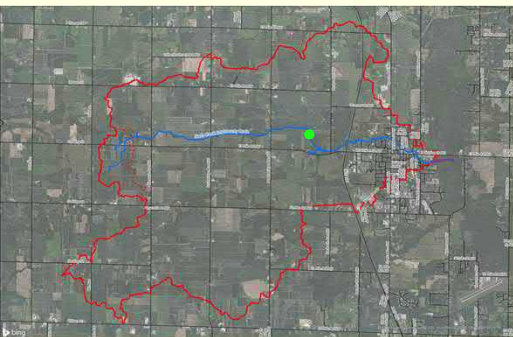


# Erosion Upstream of Phelps Avenue.



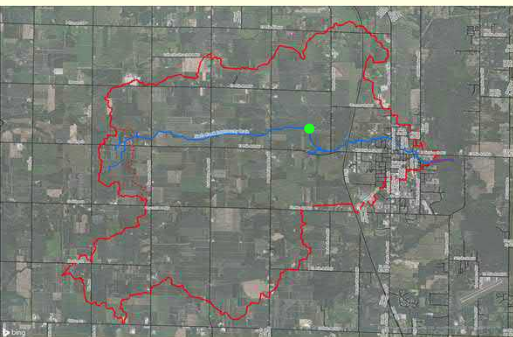


Log Jams  
Upstream of  
Phelps Avenue.



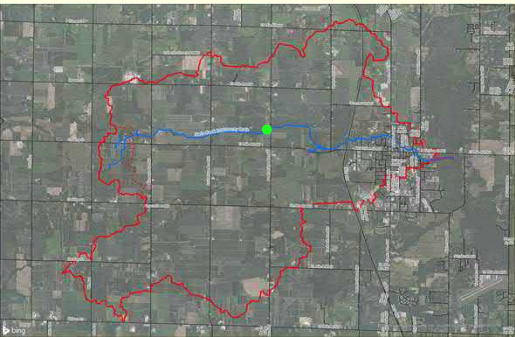


# Erosion and Fallen Tree Upstream of Phelps Avenue.



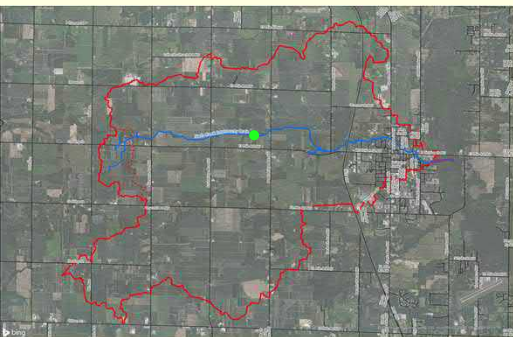


# Tree Obstructing Flow Upstream of Peach Ridge Ave.



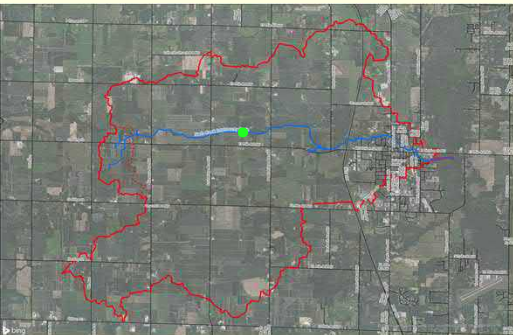


# Failed Bridge Upstream of Peach Ridge Avenue.



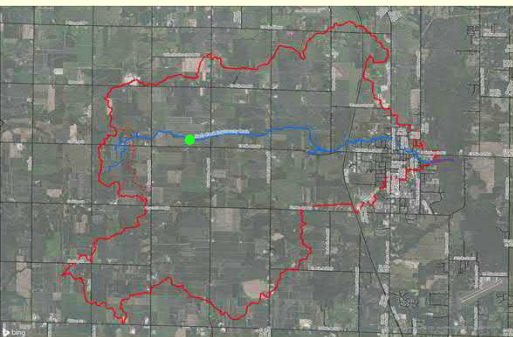


# Erosion Upstream of Peach Ridge Avenue



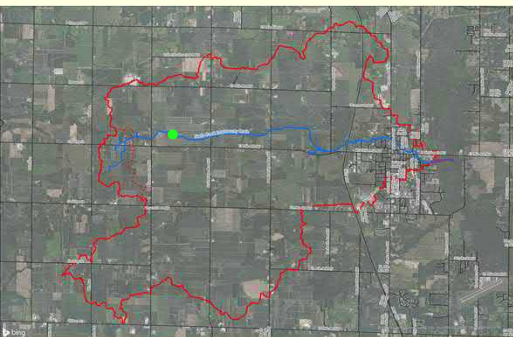


# Minor Sediment Upstream of Fruit Ridge Avenue



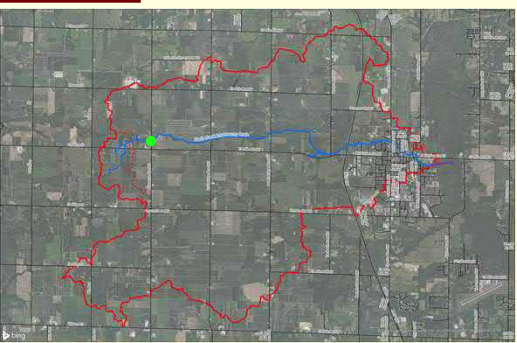


# Private Culvert Upstream of Fruit Ridge Avenue



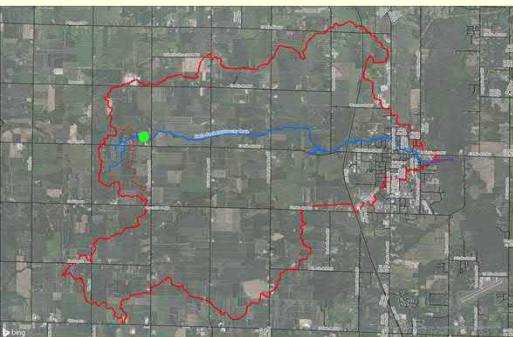


# Culvert Under Kenowa Avenue



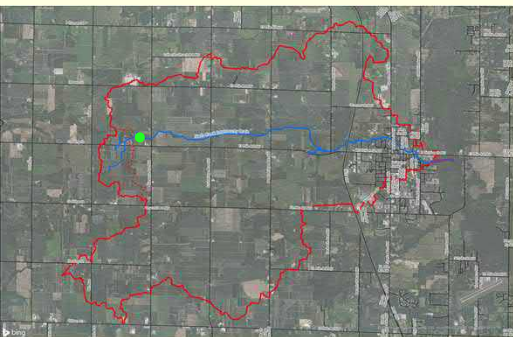


# Standing Water Upstream of Kenowa Avenue



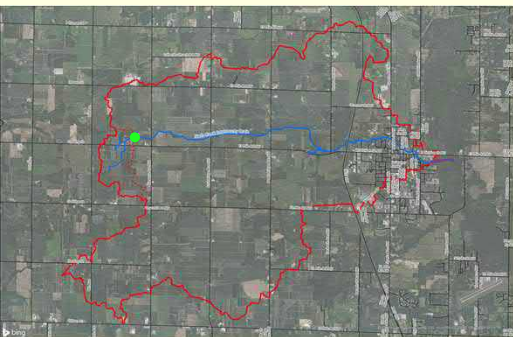


# Standing Water Upstream of Kenowa Avenue



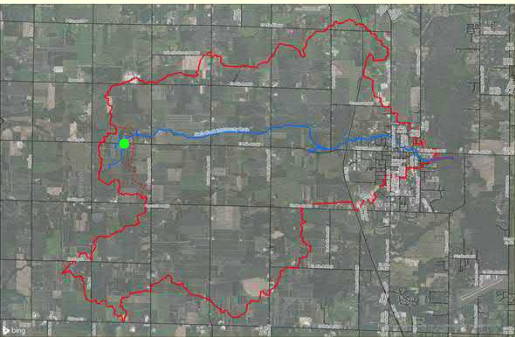


# Fallen Trees Upstream of Kenowa Avenue



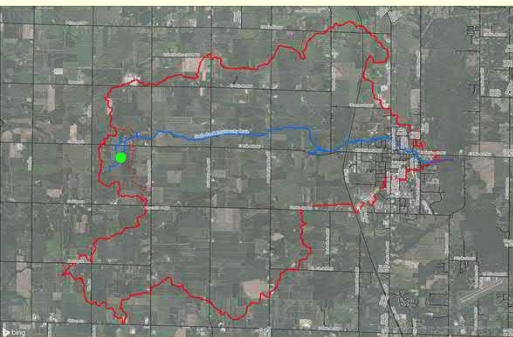


# Culvert Under Gooding Street





# Drain Upstream of Gooding Street





# General Condition

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- Excessive Woody Debris/Blockages
- Severe Erosion Throughout the Drain
- Areas of Heavy Vegetation Limiting Access to the Drain



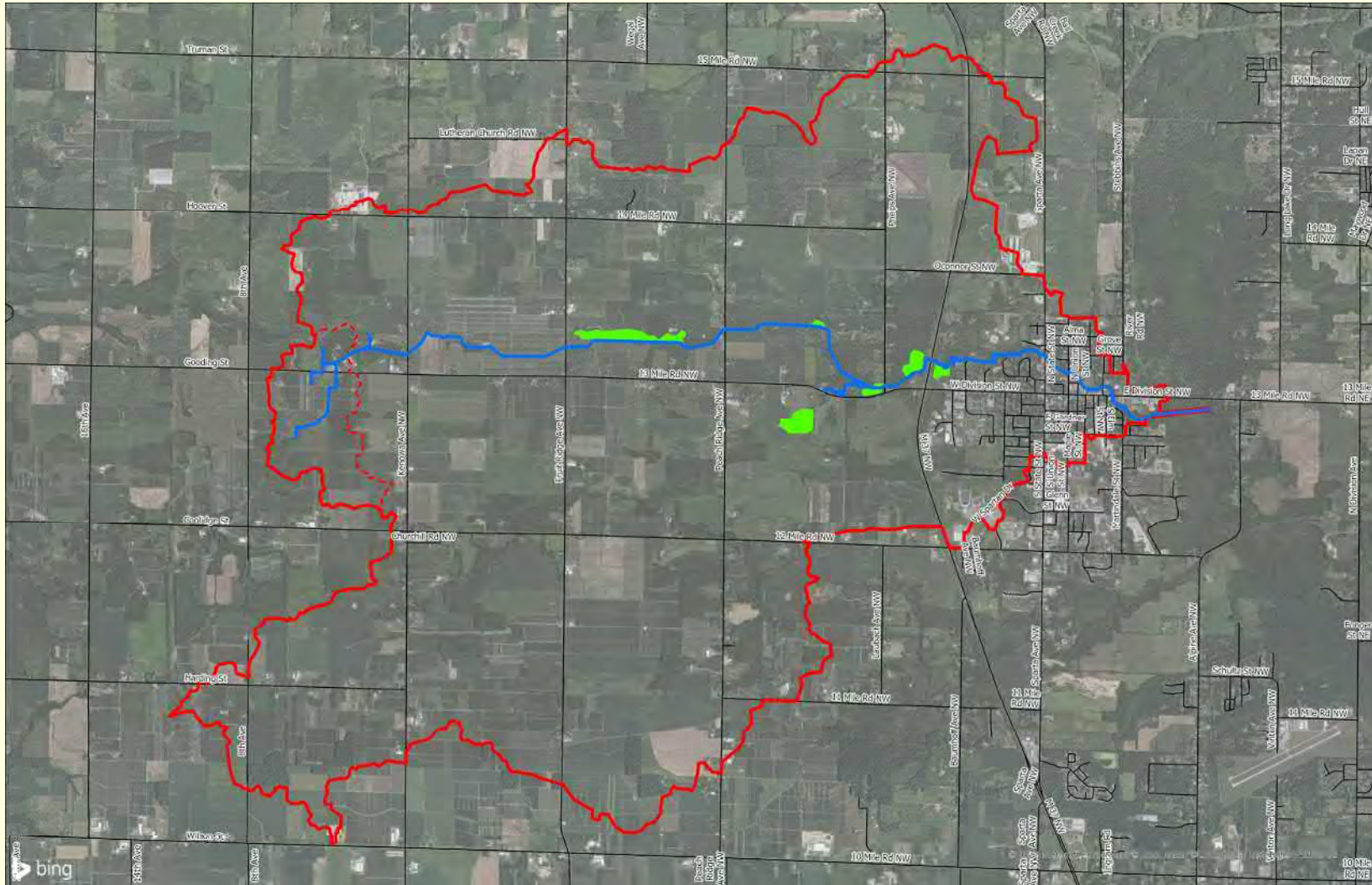
# Design Alternatives

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- Standard Maintenance
  - Debris Removal
  - Bank Repair
  - Riprap Toe of Slope
- Two-Stage Channel (Permit)
- Increasing Upstream Storage (Permit)



# Possible Detention Areas





# Preliminary Cost Estimate

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- Channel Improvements - \$3,100,000
- Drain Crossing Improvements - \$1,000,000
- Upstream Storage Creation - \$3,300,000
- Miscellaneous Construction - \$1,600,000
- Total Construction Cost - \$8,900,000



# Questions

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Michigan Department of Agriculture and Rural  
Development – Brady Harrington

Kent County Drain Commissioner – Ken Yonker

Ottawa County Water Resources Commissioner – Joe Bush

Spicer Group, Inc. – Paul Forton

