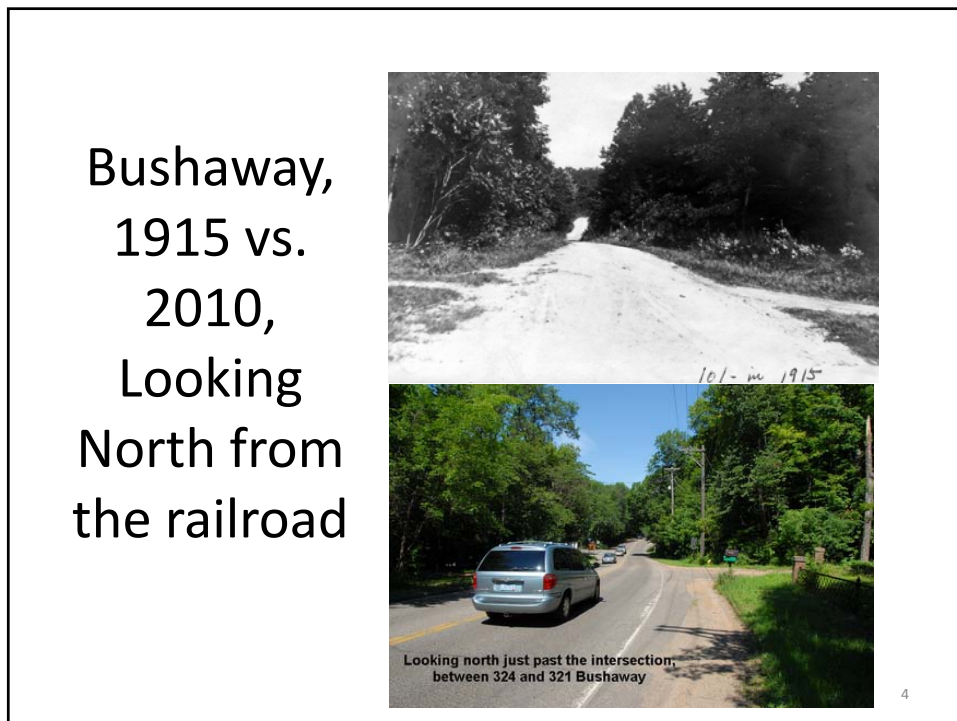
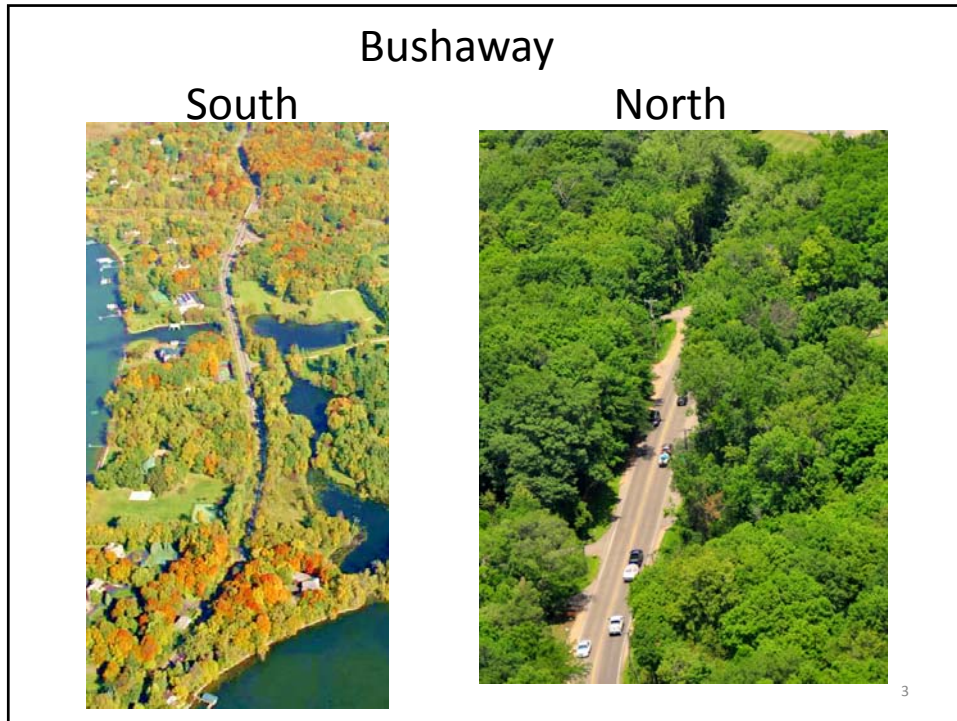


Outline

- 1. Jack Amdal, Chair, Bushaway Task Force
'Introduction and background'**
- 2. Ron Anderson, 'History of recent
neighborhood activity'**
- 3. Manuel Jordan, 'Tree inventory of
Bushaway Corridor'**
- 4. Peter Pflaum, 'Engineering study of
latest proposed reconstruction on
623/630 Bushaway'**
- 5. Ron Anderson, Conclusions**

2



In 1915, Looking from 324 Bushaway (Field house) toward Lake Minnetonka



Proposed reconstruction would remove the fence and further block views of Lake Minnetonka

5


History (highlights) of recent Bushaway neighborhood activity: 2008

1. **May 2008: first neighborhood meeting on County new reconstruction plan, led by Suzane Bangert**
2. **Oct. 2008: based upon discovered 1858 survey map, Wayzata celebrated Sesquicentennial of Bushaway Road**



6





History (highlights) of recent Bushaway neighborhood activity: 2009

3. The Bushaway Preservation Fund (with the help of generous donors such as Zita Hawley Wright) commissioned the Mead & Hunt Study of the Historic Significance of the Bushaway Corridor

Evaluation of National Register of Historic Places Eligibility


Bushaway Road Historic District

Prepared for
Bushaway Preservation Fund

Prepared by
MEAD HUNT
www.meadhunt.com


August 2009

7



History (highlights) of recent Bushaway neighborhood activity: 2009

4. Neighborhood research questioned traffic forecast. County counted Bushaway traffic in 2009. Traffic has declined by 13% since 2003.
5. Under Zita's initiative, signs were installed by County for Historic Bushaway Road entrances.



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History (highlights) of recent Bushaway neighborhood activity: 2009

- 6. Irene Stemmer completes History of Bushaway Road
- 7. Bushaway Exhibit for a month in Wayzata Library
- 8. Bushaway Road in JJ Hills Day Parade



9



History (highlights) of recent Bushaway neighborhood activity: 2010

- 9. Bushaway History Trolley Tours
- 10. Bushaway Arbor Survey



10

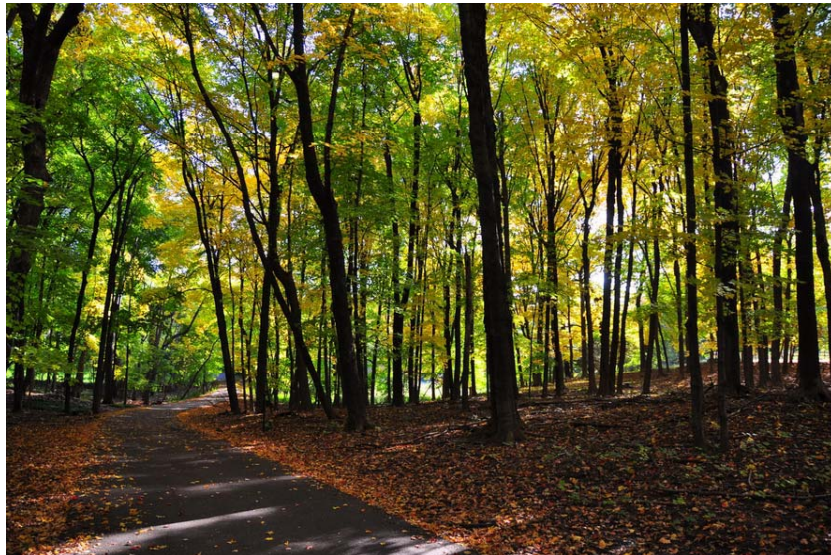
Natural Forests in Bushaway Corridor



•Note: Northern Bushaway Road cuts a large, natural Maple-Basswood forest (all of green area #6) in half, which explains the dense tree canopy there. See Comp. Plan for full map & key.

11

Maple Basswood Forest: (“Big Woods”)



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- **The neighborhood wanted to conduct an independent tree study of the impact of the most recent County reconstruction proposal.**
- **I happened to read an article in the Star Tribune about Professor Gary Johnson, U of MN Extension, who authored the report “Protecting Trees from Construction Damage”**
- **In a StarTribune article he stressed how important it is to get an ISA Certified Arborist to conduct tree impact studies.**
- **I called him and asked him to conduct a study but his number one recommendation was Manuel Jordan, Heritage Shade Tree Consultants**

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- **To prepare for the tree impact study, we:**
 - Used the latest (May, 2010) County drawings to determine boundaries of tree risk zones, which we defined as the outer boundaries of clear zones, which in most road segments coincide with the construction zones.
 - Estimated distances from existing white traffic lines to the edge of the clear zones were calculated and given to property owners and to Manuel Jordan

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- **Manuel Jordan**
 - Has numerous degrees and certificates in forestry and engineering
 - Consulted for many tree projects in Hennepin County
 - Served as a Commissioner for Bassett Watershed Board in St. Louis Park
 - Served as City Forester for New Hope
 - Many other professional roles and professional certifications
- **He will speak on**
 - Benefits of trees
 - Results of preliminary Bushaway tree inventory
 - Valuation of trees
 - Conclusions

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Top 10 Benefits of Trees

- **1. Trees Produce Oxygen**
- Let's face it; we could not exist as we do if there were no trees. A mature leafy tree produces as much oxygen in a season as 10 people inhale in a year. What many people don't realize is the forest also acts as a giant filter that cleans the air we breathe.
- **2. Trees Clean the Soil**
- The term phytoremediation is a fancy word for the absorption of dangerous chemicals and other pollutants that have entered the soil. Trees can either store harmful pollutants or actually change the pollutant into less harmful forms. Trees filter sewage and farm chemicals, reduce the effects of animal wastes, clean roadside spills and clean water runoff into streams.

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Top 10 Benefits of Trees

- **3. Trees Control Noise Pollution**
- Trees muffle urban noise almost as effectively as stone walls. Trees, planted at strategic points in a neighborhood or around your house, can abate major noises from freeways and airports.
- **4. Trees Slow Storm Water Runoff**
- Flash flooding can be dramatically reduced by a forest or by planting trees. One Colorado blue spruce, either planted or growing wild, can intercept more than 1000 gallons of water annually when fully grown. Underground water-holding aquifers are recharged with this slowing down of water runoff.

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Top 10 Benefits of Trees

- **5. Trees Are Carbon Sinks**
- To produce its food, a tree absorbs and locks away carbon dioxide in the wood, roots and leaves. Carbon dioxide is a global warming suspect. A forest is a carbon storage area or a "sink" that can lock up as much carbon as it produces. This locking-up process "stores" carbon as wood and not as an available "greenhouse" gas.
- **6. Trees Clean the Air**
- Trees help cleanse the air by intercepting airborne particles, reducing heat, and absorbing such pollutants as carbon monoxide, sulfur dioxide, and nitrogen dioxide. Trees remove this air pollution by lowering air temperature, through respiration, and by retaining particulates.

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Top 10 Benefits of Trees

- **7. Trees Shade and Cool**
- Shade resulting in cooling is what a tree is best known for. Shade from trees reduces the need for air conditioning in summer. Studies have shown that parts of cities without cooling shade from trees can literally be "heat islands" with temperatures as much as 12 degrees Fahrenheit higher than surrounding areas.
- **8. Trees Act as Windbreaks**
- During windy and cold seasons, trees located on the windward side act as windbreaks. A windbreak can lower home heating bills up to 30% and have a significant effect on reducing snow drifts. A reduction in wind can also reduce the drying effect on soil and vegetation behind the windbreak and help keep precious topsoil in place.




Top 10 Benefits of Trees

- **9. Trees Fight Soil Erosion**
- Erosion control has always started with tree and grass planting projects. Tree roots bind the soil and their leaves break the force of wind and rain on soil. Trees fight soil erosion, conserve rainwater and reduce water runoff and sediment deposit after storms.
- **10. Trees Increase Property Values**
- Real estate values increase when trees beautify a property or neighborhood. Trees can increase the property value of your home by 15% or more.





Inventory of trees in construction zones

- After measuring approximate location of clear zone outer boundary, 2 researchers counted trees by size and species within each property
- Construction damage to trees outside construction zone, e.g., from impacts to rooting areas or grading changes, not included in counts
- Trees not counted if less than 3" (few were smaller than 6")

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Inventory of trees in construction zones

- Address, map# (per property)
- Tree species
- DBH/Size (Diameter at breast height for deciduous; height in feet for evergreens)
- Comments

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Count of trees in construction zones

Area	No. of Trees
Northern Bushaway	335
Eastman Lane (1450 & Yacht Club)	82
McGinty (1515 and 1525)	148
Southern Bushaway	186
Total trees	751

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Most Common Species Found

Species	Species Ranking
Green Ash	1 (22%)
Sugar Maple	2 (15%)
American Elm	3 (11%)
White Cedar	4 (8%)
Boxelder	5 (7%)
Basswood	6 (6%)

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17 Largest Trees Found

Species	Over 50"	Between 49" and 40"	Between 39" and 30"
Willow		2	1
Silver Maple		1	2
Red Oak	1	1	1
Green Ash			1
Cottonwood		2	3
Bur Oak		1	
Basswood			1
TOTAL	1	7	9

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- **Summary results**

- **Additional tree loss** among trees outside clear zone may not be visible for 5 to 10 years after construction. Obtaining a County escrow for such long term damage is a vehicle for handling this problem.
- Loss of tree canopy edge will likely result in **future tree losses** because of changes in wind, sunlight and soils
- Increased forest edge will encourage **invasive species** colonization adding maintenance costs

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- **Methods of Plant Valuation for Losses due to Construction Activities:**
 1. In-Kind Replacement Cost Method (trees up to 8")
 2. Trunk Formula Method (trees over 8")
 3. Reasonable and Practical Method (plant masses)

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1. In-Kind Replacement Cost

- Reflects cost to make property "whole" again – restore to original condition
- Cost of equivalent replacement (same size, species, condition and quantity)

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1. In-Kind Replacement Cost

Calculation:

- In-Kind Replacement Cost = (Retail Nursery Price of Tree + Planting Cost) x Condition Rating

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2. TRUNK FORMULA METHOD (for trees over 9")

- At some point, a tree becomes too large to be replaced practically with an equivalent one. If it cannot be replaced, what are our alternatives?
- The most common and widely used method, world-wide, is through the use of formulas.

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2. TRUNK FORMULA METHOD (for trees over 9")

It is the one most commonly used formula in the USA and establishes an initial value based primarily on size, and then adjusts the value for factors such as:

- Species quality
- Condition (vigor, structure, health,...)
- Location (setting, real estate value, function, visibility,...)
- Special situations (historic significance,...).

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2. TRUNK FORMULA METHOD (for trees over 9")

- **Appraised Cost** = **Basic Tree Cost** x **Species Rating (%)** x **Condition Rating (%)** x **Location Rating (%)**
- **Basic Tree Cost** = **Installed Tree Cost** + **Unit Tree Cost** x $(TA_A - TA_R)$

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3. Reasonable & Practical Replacement Cost

- Reflects the cost of trees to restore tree cover to a limited but reasonable approximation of its former condition
- Over time such replacement planting would restore the quality and character of the site appropriate for owner's enjoyment and use, and re-establish the function(s) of the trees

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3. Reasonable & Practical Replacement Cost

Calculation:

- Determine area covered by collective canopy of trees (sq. ft.)
- Determine spacing = Area (sq. ft.) to be occupied by Replacement Trees
- Total Area \div Area/Tree = Number of Replacement Trees

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Conclusions from Tree Inventory:

- Existing trees in Bushaway corridor have many benefits
- The loss of over 750 trees would require many years (decades) to recoup the functions of these trees
- We can minimize the loss of these trees by working together during the planning, construction, and landscaping phases

35

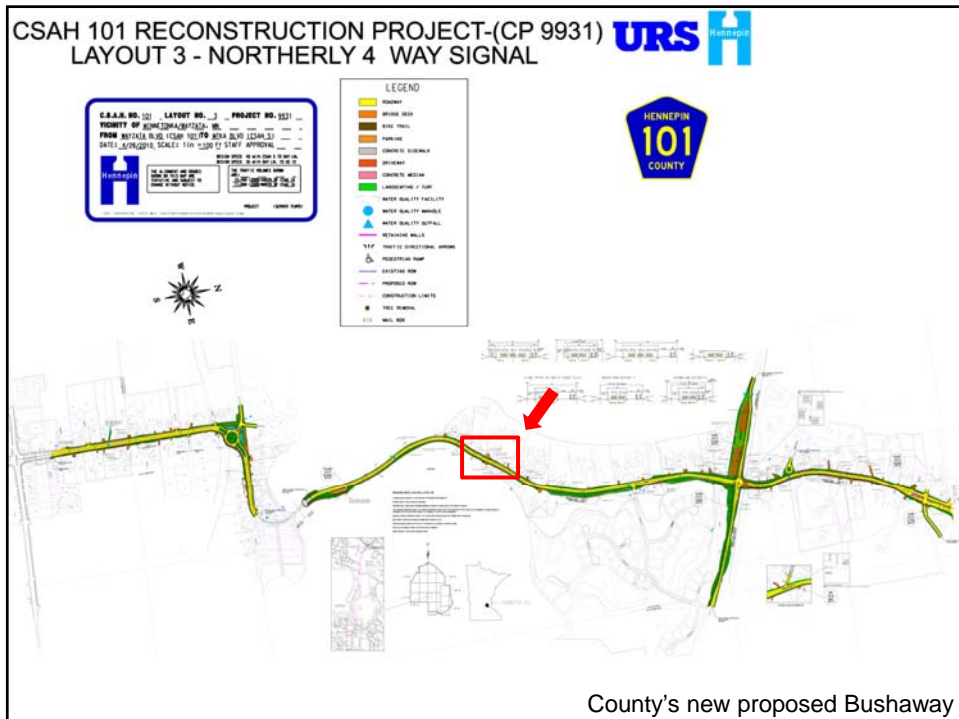


- Next, Peter Pflaum will present findings from a study he commissioned Westwood Engineering to conduct on his family's property at 623 & 630 Bushaway.

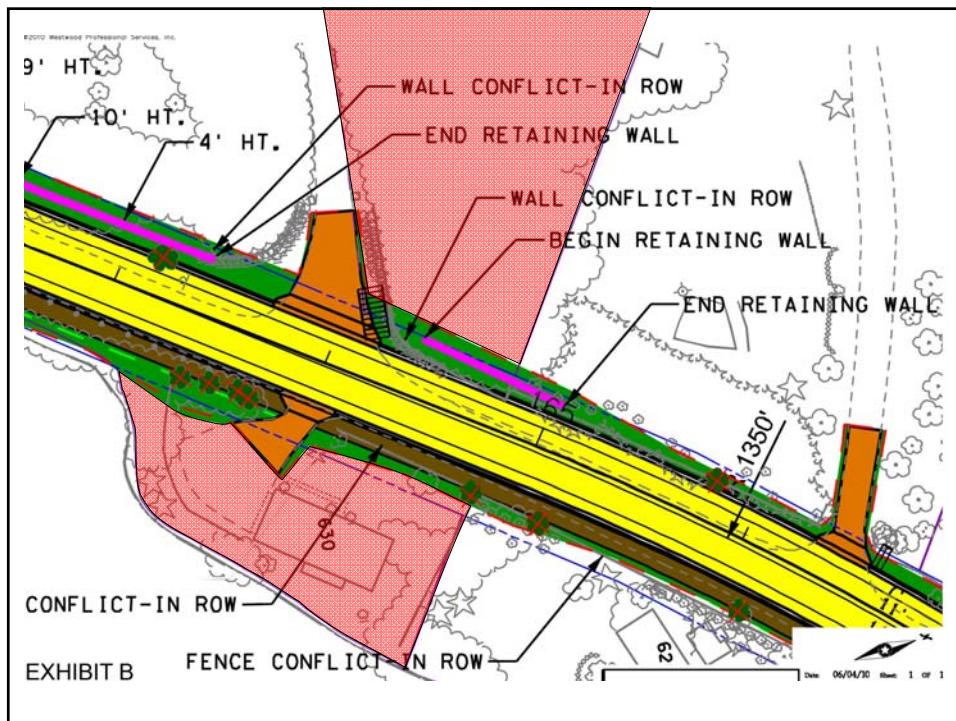
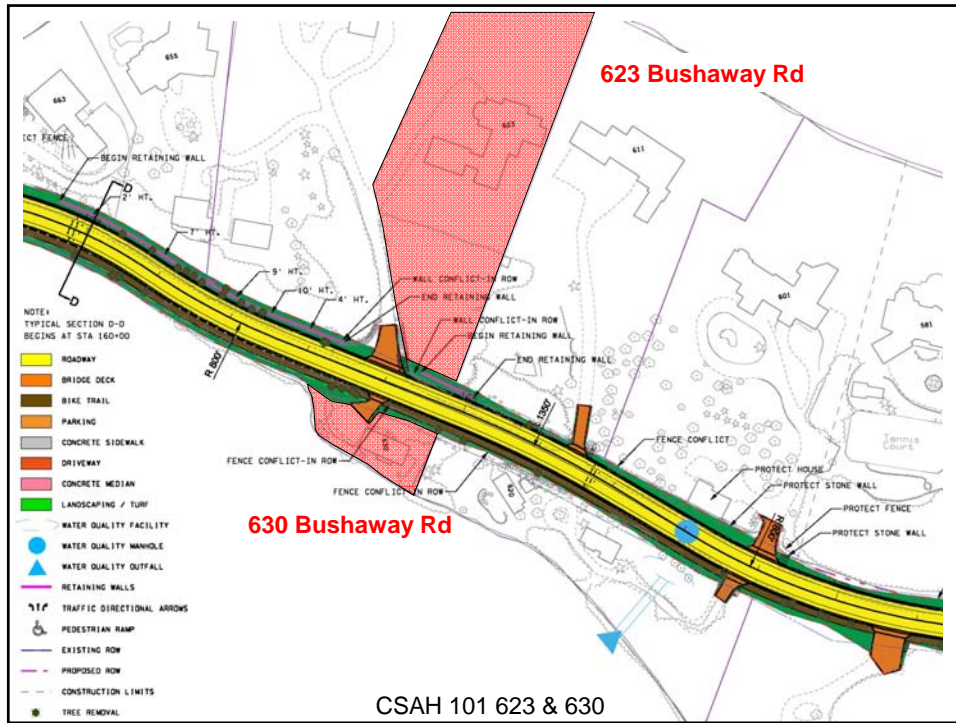
36




Wayzata City Council Work Session - September 23, 2010
Presentation on 623 & 630 Bushaway Properties



County's new proposed Bushaway





Westwood Professional Services:

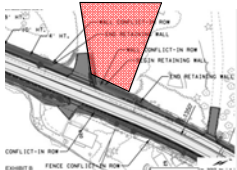
Obtained the following information from URS Corporation:

- Horizontal alignment and layout for Bushaway Road
- Proposal center line profile which illustrates the proposed vertical alignment for the roadways horizontal design
- Design cross-sections which illustrate how the horizontal and vertical alignments transition to the existing conditions on either side of the proposed roadway
- County tree survey for size and location of trees within the existing right-of-way
- Surveyed Trees on 623 Bushaway Road and 630 Bushaway Road

Sathre Bergquist Inc:

- Surveyed property corners adjacent to Bushaway Road for both properties

Results of Westwood Study:



Impact on 623 Property:

- Will destroy approximately 60' of historical stone and lattice wall (Most of curved portion of the wall and entire section that parallels Bushaway Rd)

TREE REMOVAL AT 623 BUSHAWAY ROAD - TREES LOCATED OUTSIDE ROW:



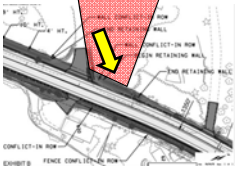
- 4\" MAPLE
- 4\" MAPLE
- 9\" MAPLE
- 22\" BOXELDER
- 2\" MAPLE
- 2\" MAPLE
- 8\" SPRUCE
- 3\" BUCKTHORN
- 11\"/11\" BOXELDER (MULTI-TRUNK)
- 12\" AMER. ELM

Labels in diagram: GRADING LIMITS, TREE REMOVAL AREA, 623 Bushaway Road, 611 Bushaway Road.

Results of Westwood Study:

Impact on 623 Property:

- Will destroy most significant portion of historical wall





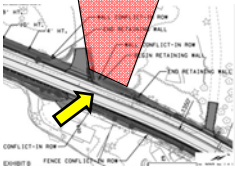
1918 Photo of Wall

Present day photo of

Results of Westwood Study:

Impact on 623 Property:

- Will destroy approximately 60' of historical stone and lattice wall (Most of curved portion of the wall and entire section that parallels Bushaway Rd)




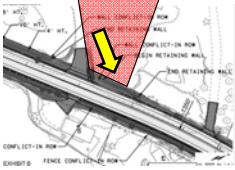
623 Bushaway Rd. portion of wall

Results of Westwood


Study:

Impact on 623 Property:

- Will destroy approximately 60' of historical stone and lattice wall (Most of curved portion of the wall and entire section that parallels Bushaway Rd)



Back of wall




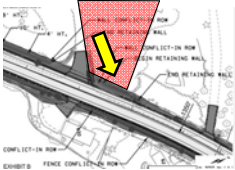
Old bridge portion of wall

Results of Westwood


Study:

Impact on 623 Property:

- Will destroy approximately 60' of historical stone and lattice wall (Most of curved portion of the wall and entire section that parallels Bushaway Rd)



Back of wall



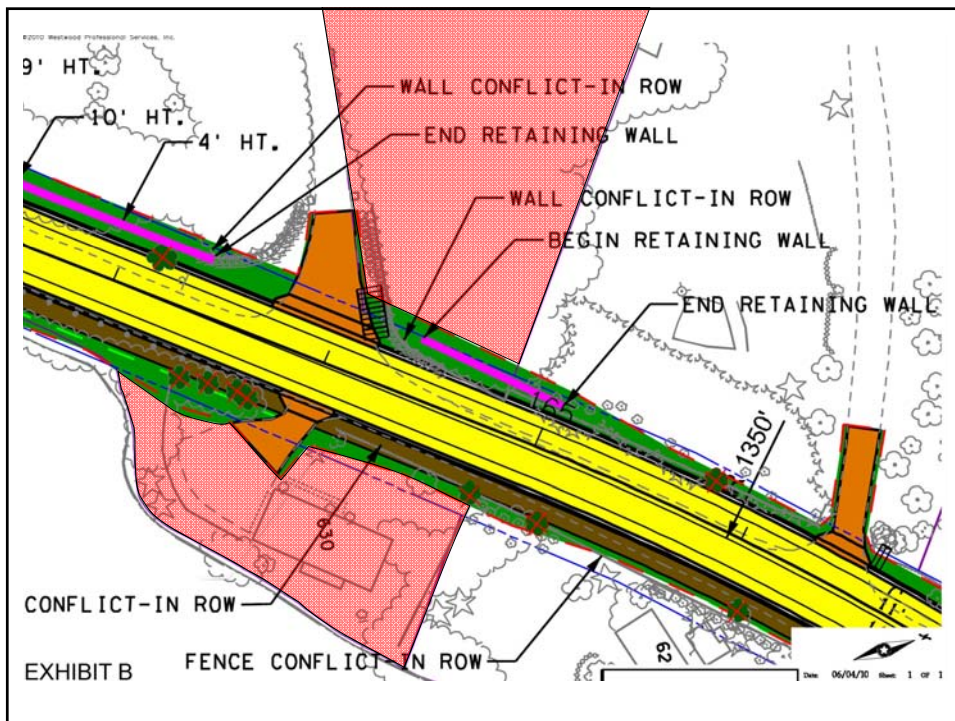
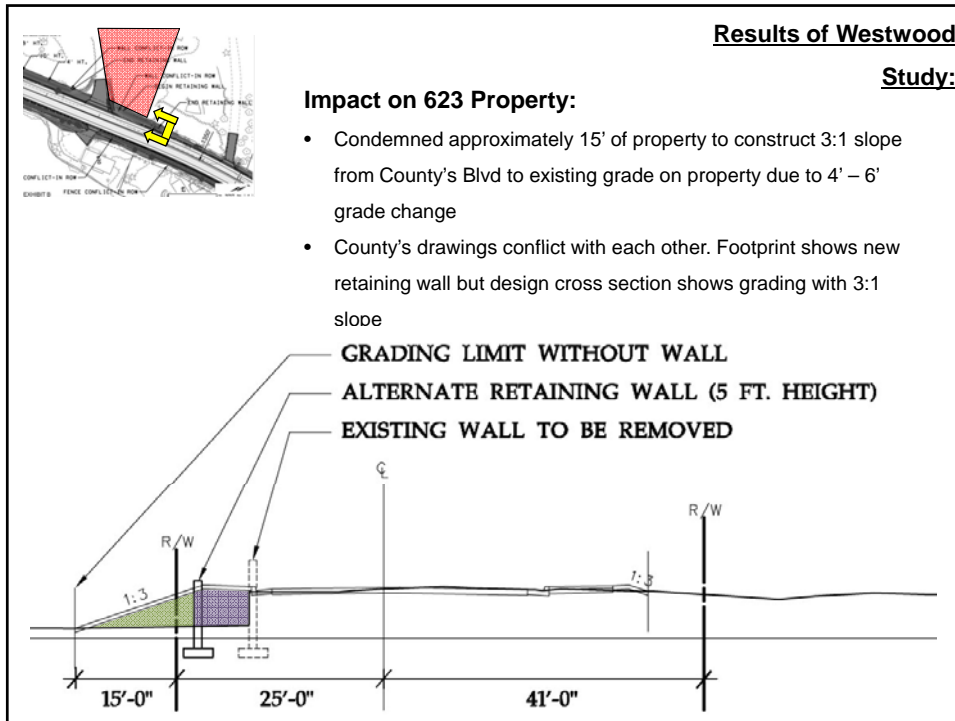
Back of wall

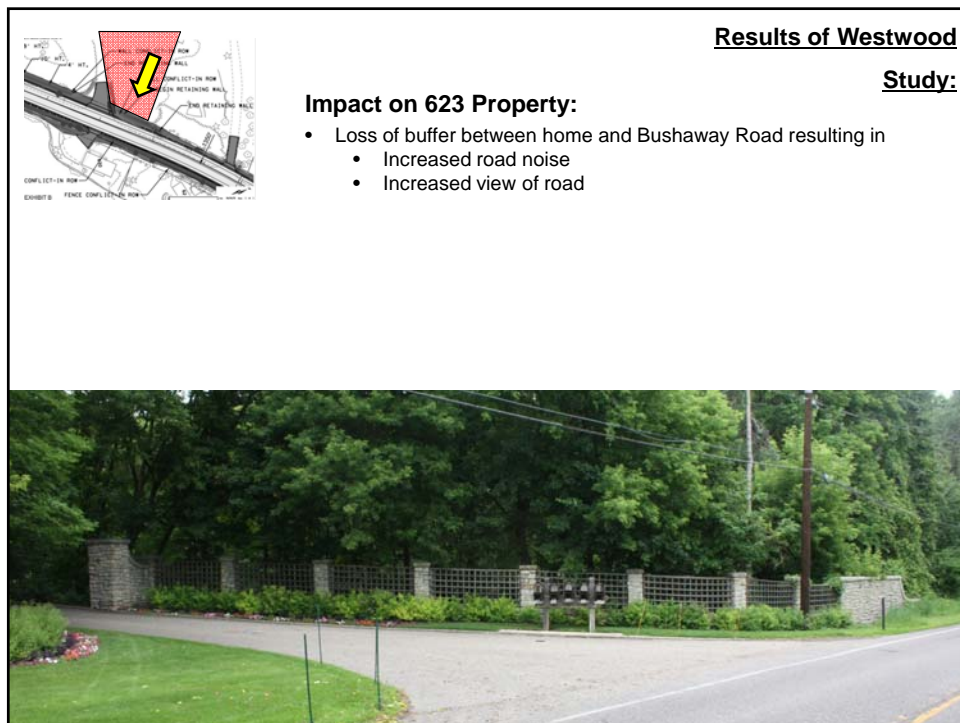
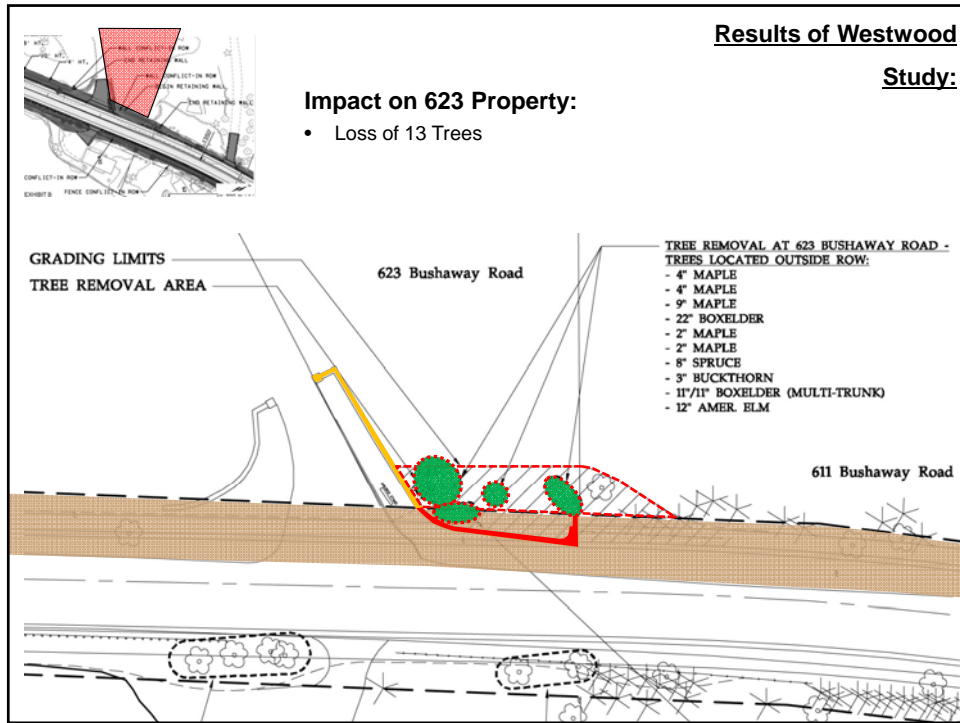
Results of Westwood

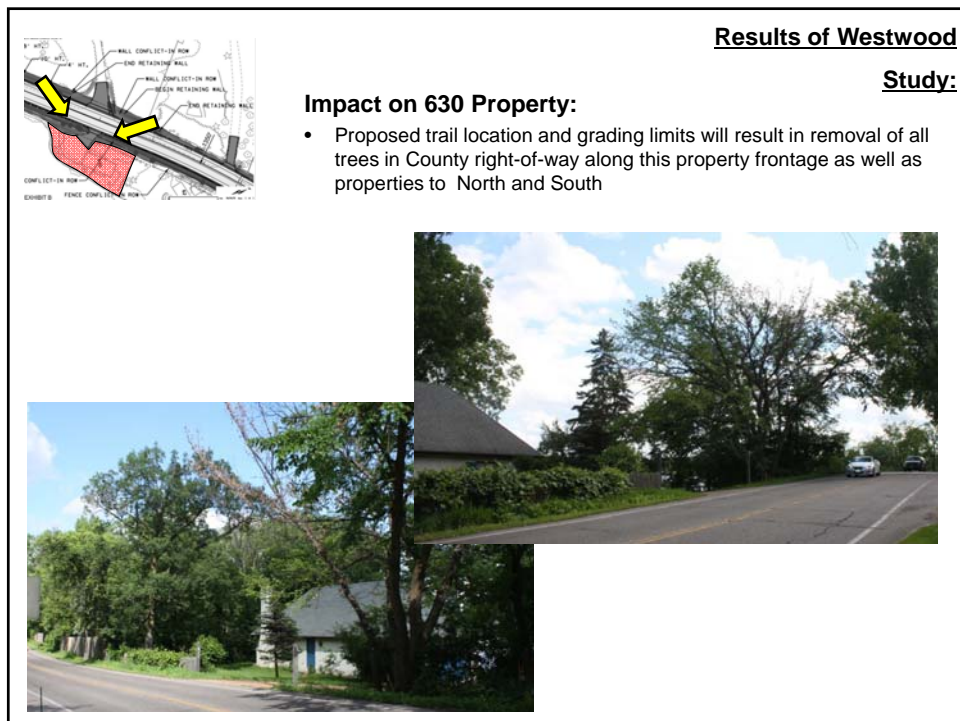
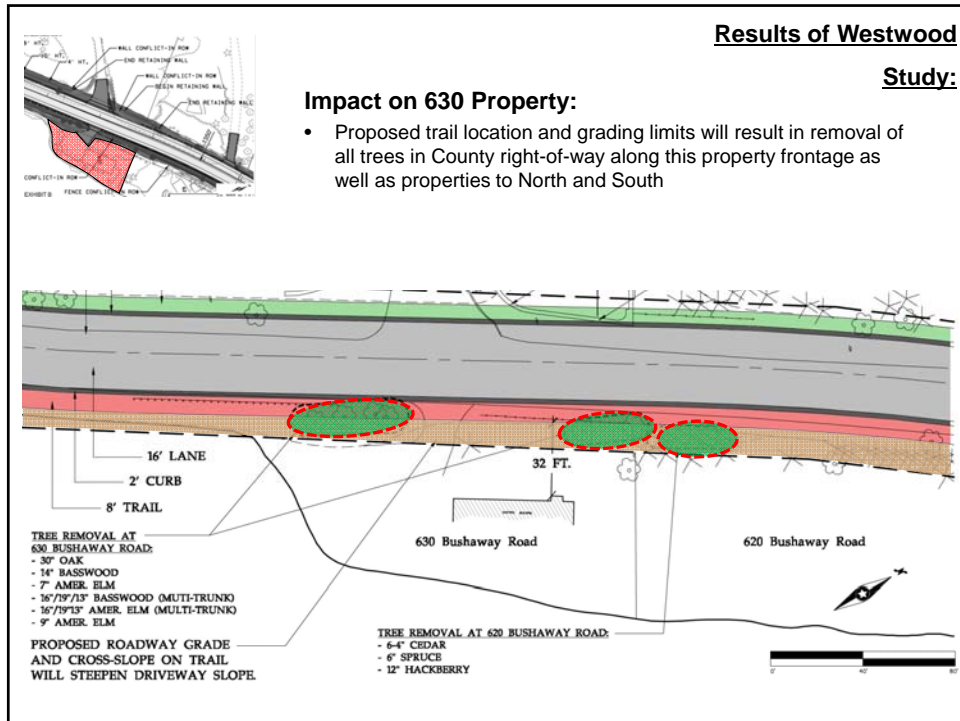
Study:

Impact on 623 Property:

- Condemned approximately 15' of property to construct 3:1 slope from County's Blvd to existing grade on property due to 4' - 6' grade change
- County's drawings conflict with each other. Footprint shows new retaining wall but design cross section shows grading with 3:1 slope





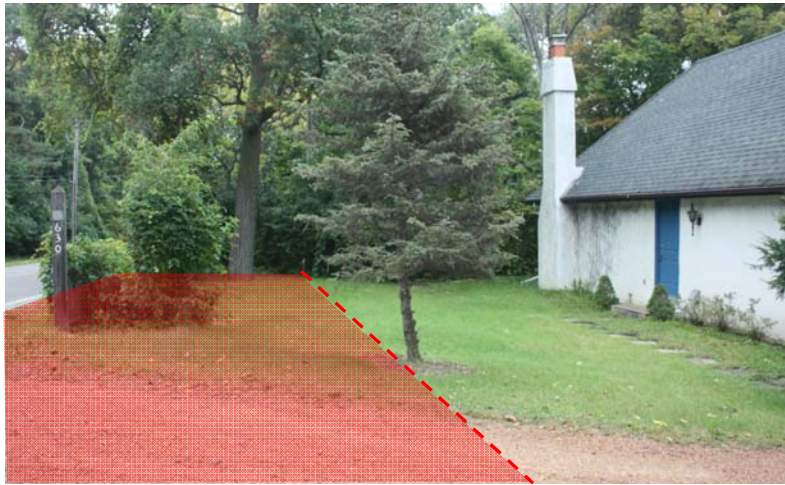
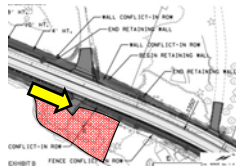


Results of Westwood

Study:

Impact on 630 Property:

- Combination of tree removal and trail 32' from house results in no privacy and making front yard practically unusable

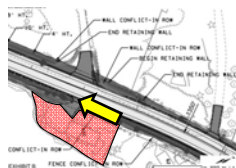


Results of Westwood

Study:

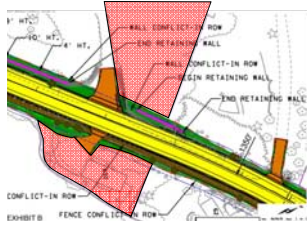
Impact on 630 Property:

- Grade drop from proposed trail to the existing driveway and parking area will require rebuilding and extending the driveway onto the property well beyond the easterly right-of-way
- Results in a driveway becoming significantly steeper, creating a dangerous condition for anyone trying to leave this



Results of Westwood

Study:



Impact on 623 Property - Summary:

- Taking down 60' of historic stone wall
- County's condemnation of 15' of property for grading
- Loss of 13 trees and damage to others
- Loss of buffer resulting in increase traffic noise and view of road from home

Impact on 630 Property - Summary:

- Combination of tree removal in right-of-way and trail 32' from home results in no privacy and practically unusable front yard
- Driveway becoming significantly steeper, creating a dangerous condition for anyone trying to leave this driveway, especially in the winter

City Council Consideration:

- Property owners adjacent to Bushaway Road should not have to hire a surveying and engineering firm to uncover damages to their property
- County should supply all property owners with information needed to analyze the damage and put information in a format property owners can understand
- Once property owner has this information, property owner needs 60-90 days to analyze material and to contact Task Force and City Council regarding any damage to their property





Wayzata City Council Work Session - September 23, 2010
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**Coming up,
More Visual Implications of
County Design for
Bushaway Road**

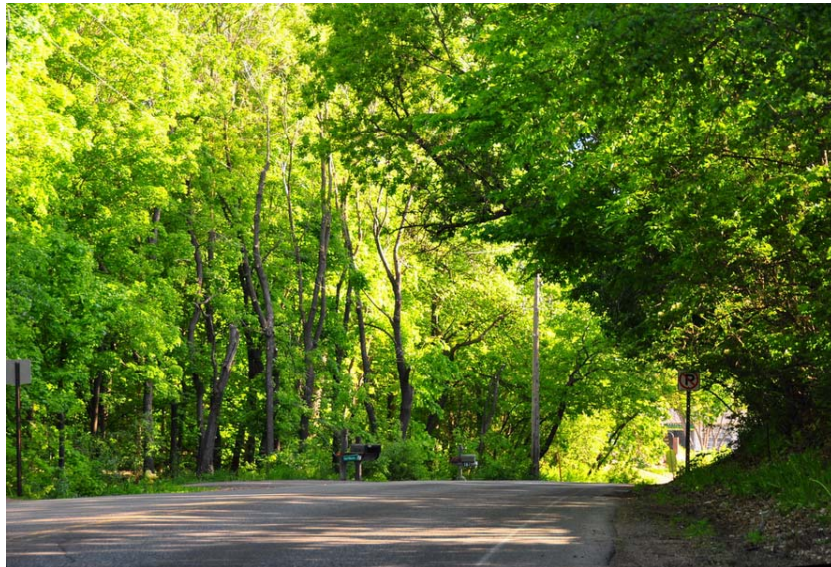
Between 231 & 240 Bushaway Looking North



Red lines in these slides approximate the edge of the construction zones, and indicate magnitude of tree loss.

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North Bushaway: Proposed Clear Zones Beyond the Edges of Photo



60

324 Bushaway Looking North



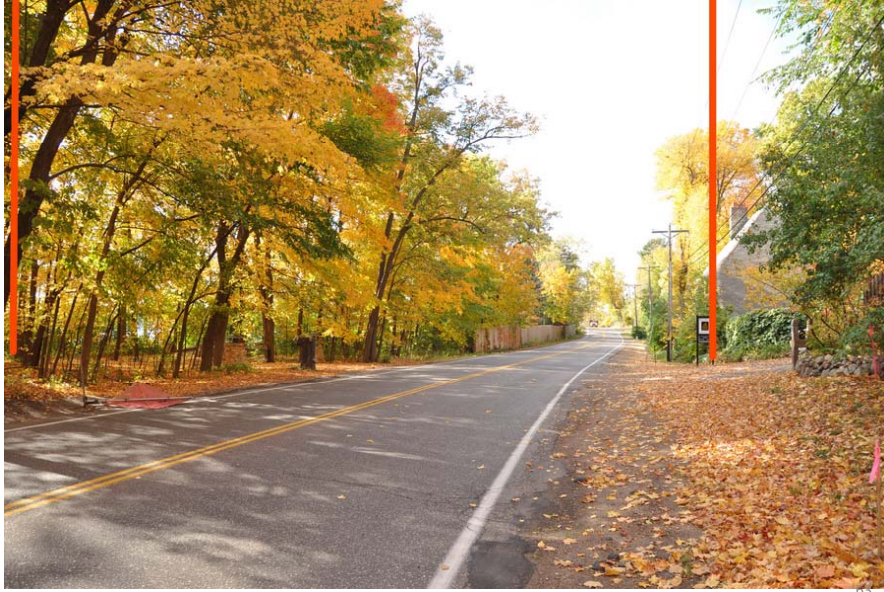
61

Between 240 & 263 Bushaway Looking South



62

Between 600 and 601 Bushaway Looking South



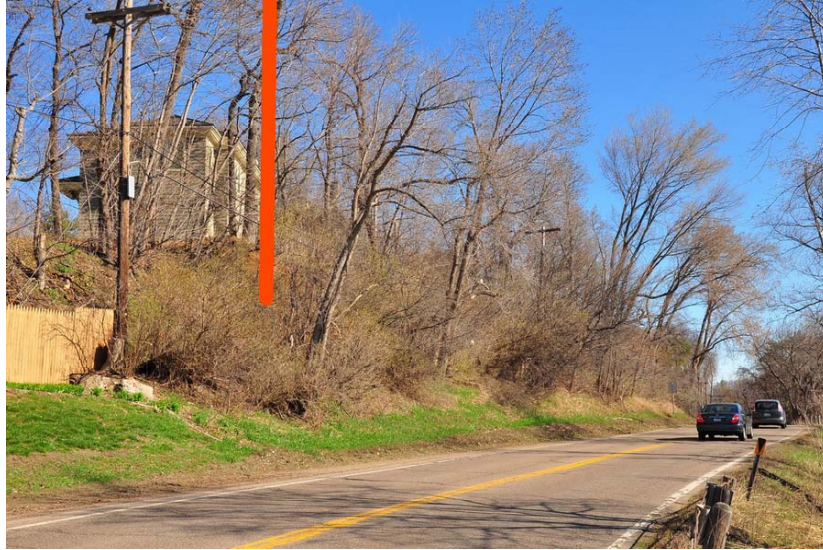
63

Between 620 and 621 Bushaway Looking South



64

655 and 639 Bushaway Embankment Looking North



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Summary of the County Responses to the City and Neighborhood Vision for Bushaway

City/Neighborhood Concern	County Response
Retain historic character of road	Can save most walls & gates but not overall character
Preserve scenic views & tree canopy	Wide road more important than canopy
Conserve environment, trees	Can plant new trees
Preserve wetlands	Good idea; new road more important
Sensitivity to community needs	Traditional engineering standards more important
Low impact design (LID)	OK, but many LID solutions require more land than is available
Retain natural traffic calming, e.g., curves	Drivers don't want to be calmed; curves are dangerous

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- **Some Conclusions**

- Each property owner and the Task Force need more technical information to evaluate the impact of the County's proposed design, including
 1. The most current horizontal alignment and layout design staked
 2. Location of the most current centerline and midpoint of the ROW
 3. The design cross-sections showing vertical alignments
- Evaluating tree impacts is not a one-time proposition; they need to be monitored during reconstruction, landscaping and years beyond.

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- **Conclusion: Comparison of studies**

- County's Tree Inventory done in 2008 and released in 2010 was very incomplete and did not identify any trees for 621 Bushaway (Pflaum's property)
- Pfaum/Westwood found twice as many trees at risk at 621 Bushaway as did the Heritage Shade Tree count because they had vertical as well as horizontal design details
- This implies that actual tree loss in the Bushaway corridor reconstruction could be easily 1,000 or even 1,500 trees.

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- **Final Conclusions**

- **Wayzata’s trees are worth millions of dollars. The City can spare a dozen but not a thousand trees.**
- **The loss to Wayzata City tax revenue could be substantial from reduction of property values due to tree loss and road reconstruction.**
- **We hope and believe that the Bushaway Task Force will be able to recommend a design that will save all or almost all the trees.**

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- Thanks to Jack Amdal and the Bushaway Task Force for their encouragement of our community-sponsored research on Bushaway trees and their implications



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