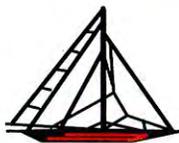


June 2010

Task Force Recommendations for Infrastructure Improvements

Prepared for:



City of Afton

City of Afton
3033 Saint Croix Trail
PO Box 219
Afton, MN 55001

WSB Project No. 1856-10

701 Xenia Avenue South, Suite 300 Minneapolis, MN 55416 763.541.4800



**TASK FORCE RECOMMENDATIONS FOR
INFRASTRUCTURE IMPROVEMENTS**

**FOR THE
CITY OF AFTON**

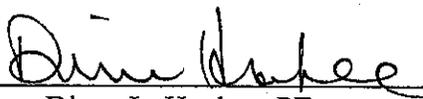
June 2010

Prepared By:

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763-541-1700 (Fax)**

CERTIFICATION

I hereby certify that this plan, specification or report was prepared by me or under my direct supervision and that I am a duly Licensed Professional Engineer under the laws of the State of Minnesota.



Diane L. Hankee, PE

Date: June 16, 2010

Lic. No. 43338

Quality Control Review By:



Todd E. Hubmer, PE

Date: June 16, 2010

Lic. No. 24043

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TITLE SHEET

CERTIFICATION SHEET

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I. EXECUTIVE SUMMARY

The City of Afton created a task force to identify needs and issues in the Old Village area of Afton. The task force considered culture, historic nature, and a destination as it relates to the needed infrastructure. The infrastructure needs that were identified included roadways, pedestrian access and trails, flood mitigation, drainage, sanitary sewer, and economic viability. The task force compared options for the various needs based on information available at the time and has provided recommendations:

- CSAH 21 should reflect a village atmosphere through traffic calming and narrowing and emphasize the natural environment while meeting the function of the roadway.
- Local streets should be improved to meet current standards for stormwater drainage and be brought up to City standards. Roadway infrastructure should be protected from flooding.
- Pedestrian access should connect points of interest and also provide a north to south trail connection running through the Old Village.
- For flood mitigation, the task force considered flood proofing and reconstructing the levee. The task force recommends the City move forward with levee reconstruction and realignment, the reasoning behind this is discussed further within this report.
- Improve stormwater quality through volume control and encouraging infiltration.
- Sanitary sewage and compliance issues need to be addressed.
- They are concerned about the economic downturn in the village and they urge the City's support for improvements.

II. INTRODUCTION AND PURPOSE

As a part of the planning process to improve the infrastructure and restore the character in the City of Afton's Old Village, a public task force was created. The goal of the task force was to analyze the needs of the area, discuss improvement options, and provide recommendations to the City Council. The planning process started with a public open house held on January 27th that solicited members to work on the task force. Comments provided by the public at the open house can be referenced in *Figure 2*. The task force met on the following dates: February, 17th, March 17th, April 21st, May 27th, and June 23rd. Minutes from each task force meeting can be found in *Appendix A*. Presentations and attendance sheets from the task force meetings can be found in *Appendix B* and *Appendix C*, respectively.

The task force consisted of the following groups and members:

Task Force Members: Bill Baglio- Task Force Chair, Bobbi Elston- Task Force Vice Chair, Gordy Jarvis- Task Force Vice Chair, Gary Anderson, Jim Bougie, Glenn Bowman, Bob Dickie, Clint Elston, Jim Gasperini, Kathy Jarvis, Kenn Kopitzke, Jane Pahl, David Schmidt, Nathan Shaw, Martin Stern, Valerie Stoehr, and Oliver Weir.

Council Liaisons: Peg Nolz, Bill Palmquist

City of Afton Staff: Ron Moorse- Interim City Administrator, Jim Norman- Interim City Administrator, Diane Hankee- City Engineer, and Todd Hubmer- PE.

In addition, Washington County staff provided support throughout the process. These staff members included Wayne Sandberg, Cory Slagle, Chris LeClair, and Patrick Waletzko.

Old Village Afton is a historical village located on Lake St. Croix that is troubled with many infrastructure issues and needs. The following is a brief description of these issues and needs:

1. Local streets in the Old Village are approximately 50 years old and in poor condition. They have met their life expectancy.
2. CSAH 21 is the main street in the Old Village Afton. CSAH 21 conveys commercial, residential, tourist, seasonal, and pedestrian traffic into and through the Old Village. This roadway should reflect the vision and function and meet the needs of the Old Village and Washington County.
3. Safe pedestrian access to all points of interest needs to be improved in the Old Village. This includes access to CSAH 21, regional trails, marinas, commercial areas, parks, and the St. Croix River.
4. There is a desire to provide a trail that runs through the Old Village and connects the regional trail at the north end of town to the south end of town.
5. The existing sanitary sewage treatment consists of individual septic systems, many of which are failing and are a concern for ground and surface water contamination.

6. Multiple septic drain fields are located within the embankment of the existing levee and should be removed.
7. Revitalization of existing businesses and residential properties cannot be undertaken with the current condition of the septic and drain field systems. This condition limits the ability for businesses and residents to improve properties.
8. The existing levee is not FEMA accredited and does not protect the Old Village from the 100-year flood event. As a result, property owners have a limited ability and desire to complete improvements to their businesses and homes.
9. Properties owners located in the 100-year floodplain are burdened by flood insurance premiums.
10. Flooded of the Old Village area impacts the City's infrastructure and also results in costly flood preparation, response, and cleanup.
11. The existing Old Village drainage system consists of a ditch and culvert system that is susceptible to flooding and not capable of collecting and conveying the stormwater flows and volumes in the Old Village, resulting in landward flooding.
12. The existing Old Village drainage system does not provide water quality treatment prior to discharge into Lake St. Croix. Water quality and treatment are anticipated to be needed in the future as part of the Lake St. Croix TMDL study.
13. The task force is concerned with meeting the load reductions of the TMDL study and recommends the City be proactive in mitigating.
14. The City of Afton has limited resources to address all of the infrastructure needs in the Old Village area. Therefore, the City is pursuing grants, partnerships, and financial assistance from other sources to assist in addressing of the needs.

III. INFRASTRUCTURE IMPROVEMENTS

A. Roadway

1. Existing Conditions

The task force felt that County Road 21 through the Old Village should better reflect the unique characteristics of the area and highlight the historical features. The existing roadway is 48 feet wide in some areas which may not be necessary to serve the community's needs. The existing right of way is approximately 80 feet wide, and the speed limit is 30 mph. The corridor is very linear and not pedestrian friendly.

The existing roadway is aged and the pavement is in poor condition. It also has an insufficient drainage system. Parking is not designated on the roadway, and pedestrian access is not continuous throughout the Old Village.

Local streets are approximately 50 years old and next on the City's reconstruction list. These streets do not have any drainage system and some have deteriorated to the point of being gravel.

2. Task Force Discussion

The task force discussed the aesthetics of the County Road 21 area and developed a conceptual vision for the roadway in relation to the rest of the Old Village. Roadway design was discussed to determine if a wide road section or a roadway with traffic calming features would better benefit the Old Village. Narrowing the street, installing paver parking areas, and providing crosswalks were all methods to achieve traffic calming. Bump outs to separate pedestrians from the main roadway were also considered as safety features.

The frequent users of the roadway such as trucks and boat haulers were also a factor during roadway discussion. The historic nature of the area and recreating a village atmosphere around County Road 21 was emphasized. Eliminating the overhead power lines was suggested to improve the aesthetics of the Old Village.

3. Task Force Recommendations

Preference was made to avoid the appearance of a thoroughfare for cars and construct traffic calming features. Introducing traffic calming features and reducing the existing roadway width is recommended to reduce traffic speed and encourage more people to enjoy the attractions of the Old Village. Narrowing the roadway will also reduce the amount of direct impervious area which will reduce stormwater volumes. The task force also recommends the consideration of pervious pavement or pavers to further reduce stormwater volumes and aid in water quality improvements. Improving parking areas with bump outs, providing multiple crosswalks, and burying the overhead utilities are also recommended by

the task force as ways to improve the appearance and atmosphere of the Old Village along County Road 21.

The County has concerns about snowplowing, infiltration basins, and general maintenance surrounding some of the task force recommendation. The County will also be completing a more involved public process during the preliminary and final design process for CSAH 21. A summary of task force goals and objectives for County Road 21 is included in *Appendix D*.

B. Pedestrian Access and Trail Connections

1. Existing Conditions

There are a number of pedestrian access issues that limit the flow and safety of pedestrian travel throughout the Old Village. Crosswalks and ADA pedramps should be constructed throughout town to make pedestrian travel easier and safer. Parking and pedestrian access needs to be coordinated for people visiting the marinas, businesses, and parks. Access to Steamboat Park and City Park should be improved so residents and visitors can more easily use and enjoy the two parks. The Regional Trail ends north of the Old Village and needs to be extended to connect to the south end of the Old Village and continue on to Afton State Park.

2. Task Force Discussion

The task force discussed the existing pedestrian issues and options to improve access and pedestrian travel in the Old Village. Various trail and sidewalk alignments and locations were discussed. The most popular location for the north/south trail connection was along the top of the levee. Increasing the number of crosswalks and parking spaces with bump outs to delineate pedestrian areas from the roadway and create a shorter crossing distance would result in improved safety. Focus was expressed to accommodate pedestrians whereas in the past the focus was on traffic.

3. Task Force Recommendations

The task force recommends connecting the regional trail at the north end of town with the south end of town for future extension to Afton State Park see *Appendix J*. The recommended alignment includes the trail being located on top of the levee. This trail will also provide easy access to Steamboat Park and for maintenance of the newly aligned levee. There was a consideration provided by Emergency Management that the trail may not be allowed on the levee for safety reasons and depending on the design. The task force still wanted to keep the path location on the levee as a recommendation.

In addition, it is recommended that crosswalks be constructed throughout town to provide improved access to the businesses, and parks. Wide sidewalks that have a welcoming feel are also recommended along County Road 21. The goal of the recommended improvements is to improve pedestrian safety within the Old Village.

C. Flood Mitigation

1. Existing Conditions

The existing levee system was initially constructed to protect approximately 25 acres of the City of Afton from the flood waters of Lake St. Croix. The existing levee system does not protect the Old Village from the 100-year flood event and does not meet many of the requirements for FEMA accreditation. As a result a significant portion of the Old Village, located to the west of the levee, is still considered in the 100-year floodplain and experiences frequent flooding. Flooding damages the City's infrastructure which reduces the design life of the pavements and utilities. The flooding also results in high temporary flood preparation, response, and cleanup costs.

Home and business owners located in the 100-year floodplain are burdened with high flood insurance premiums which limit the ability and desire of property owners to improve or develop businesses and homes. This is having a negative financial impact and is affecting the viability of the Old Village area and its ability to attract residents and visitors. In addition, portions of the existing levee are located on private property that has not been acquired by easement which will soon become a requirement of FEMA.

Flood proofing of some of the homes in the Old Village area has also been completed. This method of flood protection involves constructing improvements to structures to prevent or limit damage during a flood. This can be an effective means of flood protection, but does not protect the City's infrastructure from the damages and costs associated with cleanup from a flood event.

2. Task Force Discussion

The task force discussed the existing flood protection measures that have been undertaken in the Old Village area and the possible improvement options to protect the City from the 100-year flood event. Three main options were discussed:

- 1) Property buyouts and relocation.
- 2) Reconstruct levee and achieve FEMA accreditation.
- 3) Flood proof remaining structures in floodplain.

There was also a concern about an Indian Burial ground in the vicinity of the old railway bed that the levee is constructed on.

3. Task Force Recommendations

It was decided that property buyouts and relocation would be far more expensive than the other two options involving the construction of flood protection. Not only would it include buying out the properties, but it would require relocating property owners along the river or rebuilding the entire Old Village area. It was also decided that flood proofing the remaining structures in the floodplain would only accomplish the goal of protecting structures against flooding, not protecting the other infrastructure against flood damages, cleanup, and the associated expenses. A cost comparison of flood proofing remaining structures and reconstructing the levee can be found in *Appendix E*.

It was the consensus of the task force to recommend the option to reconstruct the levee and achieve FEMA accreditation. By achieving accreditation, flood insurance for many of the structures in the Old Village can be eliminated or significantly reduced. Three different levee alignments were discussed and analyzed and are shown in *Figure 3*. Alignment option 3 is recommended because it is constructed on City parcels and relocates the portion of the levee that is currently located on private property. Option 3 also allows for some open space that can be used for the construction of stormwater treatment basins or wetlands on the west side of the levee. These stormwater treatment facilities will allow for additional stormwater treatment prior to discharge to Lake St. Croix while also providing wildlife habitat areas and points of interest along a potential future trail.

D. Drainage

1. Existing Conditions

The existing drainage system consists of a ditch and culvert system that does not have the collection and conveyance capabilities required for the Old Village area. As a result there is a significant amount of flooding throughout the Old Village and water frequently pools west of the existing levee during large rainfall events. Drainage improvements were constructed during the recent County Road 18 reconstruction project just west of the Old Village. The system to the east lacks the capacity to handle these flows which results in additional flooding. The lack of an adequate drainage system also results in erosion and sedimentation issues. The Old Village is located between the bluffs and Lake St. Croix and experiences significant erosion and sedimentation during large rainfall events. *Figure 4* shows the drainage areas near the Old Village.

Flooding and groundwater within the Old Village has the potential to inundate individual septic systems which may contaminate ground and surface waters. In addition, there are currently no BMPs or treatment devices present to provide volume control and treatment of stormwater runoff prior to discharge into Lake St. Croix. Kelle's creek cuts through the bluffs and Old Village area and conveys

large amounts of runoff from adjacent properties to Lake St. Croix. Lake St. Croix is impaired for nutrients but a TMDL has not yet been completed. The City will be required to address the TMDL and meet requirements once the TMDL has been completed and approved by the MPCA.

2. Task Force Discussion

The task force discussed existing drainage in the Old Village area and possible solutions to the issues. A conventional pipe collection and conveyance system was considered along with a more open channeled system with natural features. Many members expressed the importance of keeping the rural characteristics of the area and constructing a low impact design. Implementing natural features that would add character to the historical area was a desire of the task force.

3. Task Force Recommendations

Many discussions about the existing conditions and possible improvements lead the task force to recommend a stormwater collection system with volume control and infiltration close to the source. Concepts recommended include: porous pavers in parking areas and on portions of CSAH 21 and local streets, biofiltration (rain gardens) and natural vegetation along the roadway, irrigation reuse at City Park, and runnels along the roadway. The runnels would function as an open channel system to collect and convey stormwater. The stormwater system would have a natural appearance and encourage infiltration through all of the concepts recommended.

E. Sanitary Sewer

1. Existing Conditions

The old village is served by sanitary sewage treatment systems (SSTS) and a 201 sanitary collection system that provides treatment for an additional eleven homes along the St. Croix River. Many of these existing sanitary systems are located in the 100-year floodplain and within the levee and are highly susceptible to flood waters. A summary of the existing system can be found in *Appendix F*. Environmental impacts to groundwater and downstream surface waters may result from septic systems or sewage infiltration during flooding and for prolonged periods following flood events. The septic systems need to be addressed. FEMA has indicated to staff that the City should deal with the situation in the near future. The septic systems located in the levee will need to be removed to allow for reconstruction and FEMA accreditation of the levee. FEMA accreditation of the levee will not occur if individual septic systems remain in the embankment.

2. Task Force Discussion

The task force discussed the existing sanitary sewer system and improvement options for the Old Village. Three treatment systems were analyzed and considered by the task force: subsurface sewage treatment system (SSTS) replacement, point source treatment, and local collection and treatment. A cost comparison of the sanitary treatment options can be found in *Appendix G*.

1) SSTS

The SSTS replacement option was included to compare costs of the systems that are in place today. However, approximately half of the existing systems will not be in compliance in the future due to failure to protect ground water or limited lot size for a drain field.

2) Point Source Treatment System

The point source treatment system, similar to the SSTS, treats the sanitary sewage at the source where it is generated; therefore each property treats its own sewage separately. Replacing toilet fixtures, separation of plumbing, and reconstruction work within each home and business is required to separate the grey water. The extent of retrofitting will vary depending on existing structural layout, number of bathrooms, and accessibility to plumbing within each house or business. Space on the property is required for a drain field to treat the grey water as well as for the composter. The system will require regular hauling of compost material from each site along with maintenance of pine bedding (compost media), drain field, and septic system. Obtaining permits for this system from the County and the State would be required. This option is currently available to property owners.

3) Local Collection and Treatment System

This sanitary treatment method would consist of a pipe network and pump stations to convey sewage to a treatment location outside the 100-year floodplain of the St. Croix River. These systems are a common method of sanitary treatment and require little to no maintenance from the individual property owner for proper operation. A location for this system will need to be selected near the Old Village to serve as the treatment location for sanitary sewage. Treatment location will be determined during the design process.

3. Task Force Recommendations

The task force feels that the current sanitary systems need to be addressed. A summary of the existing SSTS compliance is included in *Appendix F*. The group felt that of all the needs sanitary sewage should be a priority of the City.

F. Economic Viability

1. Existing Conditions

There were 5 to 7 businesses out of approximately 15 businesses for sale in the old village this winter (2009/2010). Task force members are concerned about the ability to maintain a viable business in downtown Afton. In the winter time there is little traffic to support the businesses and in the summer they are finding it harder to compete with surrounding communities without any improvements.

2. Task Force Discussion

The members of the task force support the niche feel of the businesses in the old village, however they feel limited in their ability to reinvest in their properties. The structures and infrastructure are aged and change is needed.

3. Task Force Recommendations

Through improving the infrastructure, restoring the historic downtown atmosphere and emphasizing the parks and recreation, the City could create a destination feel with places of interest in the old village. The Community should develop partnerships with all downtown users and establishments.

There was also a need to look at City ordinances as they relate to the ability to improve property in a feasible manner.



Legend

- Existing Levee
- 100-Year Floodplain
- Old Village Limits

**Task Force Recommendations
for Infrastructure Improvements
in the Old Village**
Figure 1: Location Map



N

0 700

Feet

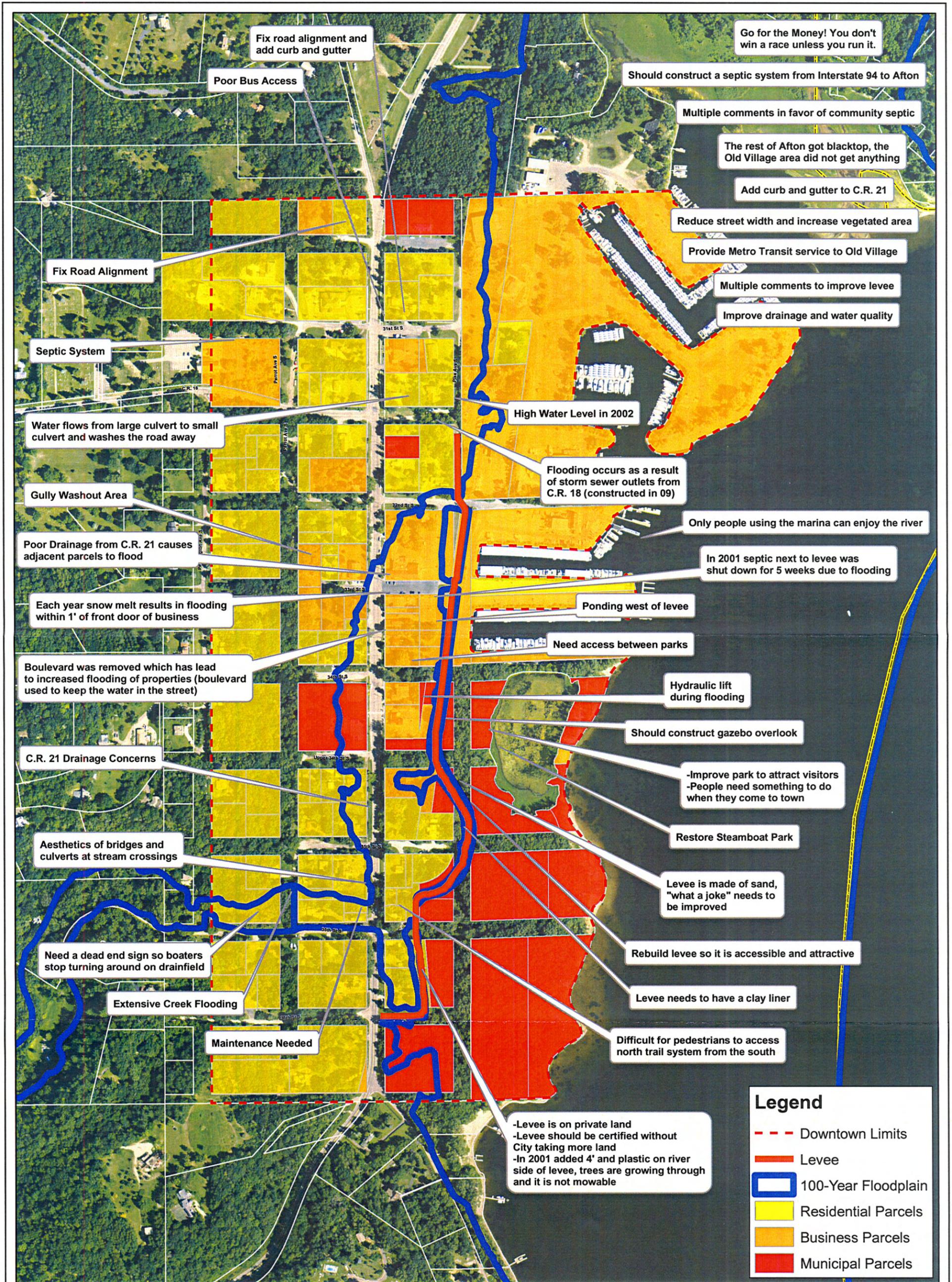


Figure 2: Afton Open House Public Comments Map



**Task Force Recommendations
for Infrastructure Improvements
in the Old Village**

Figure 3: Levee Alignment Options

Legend

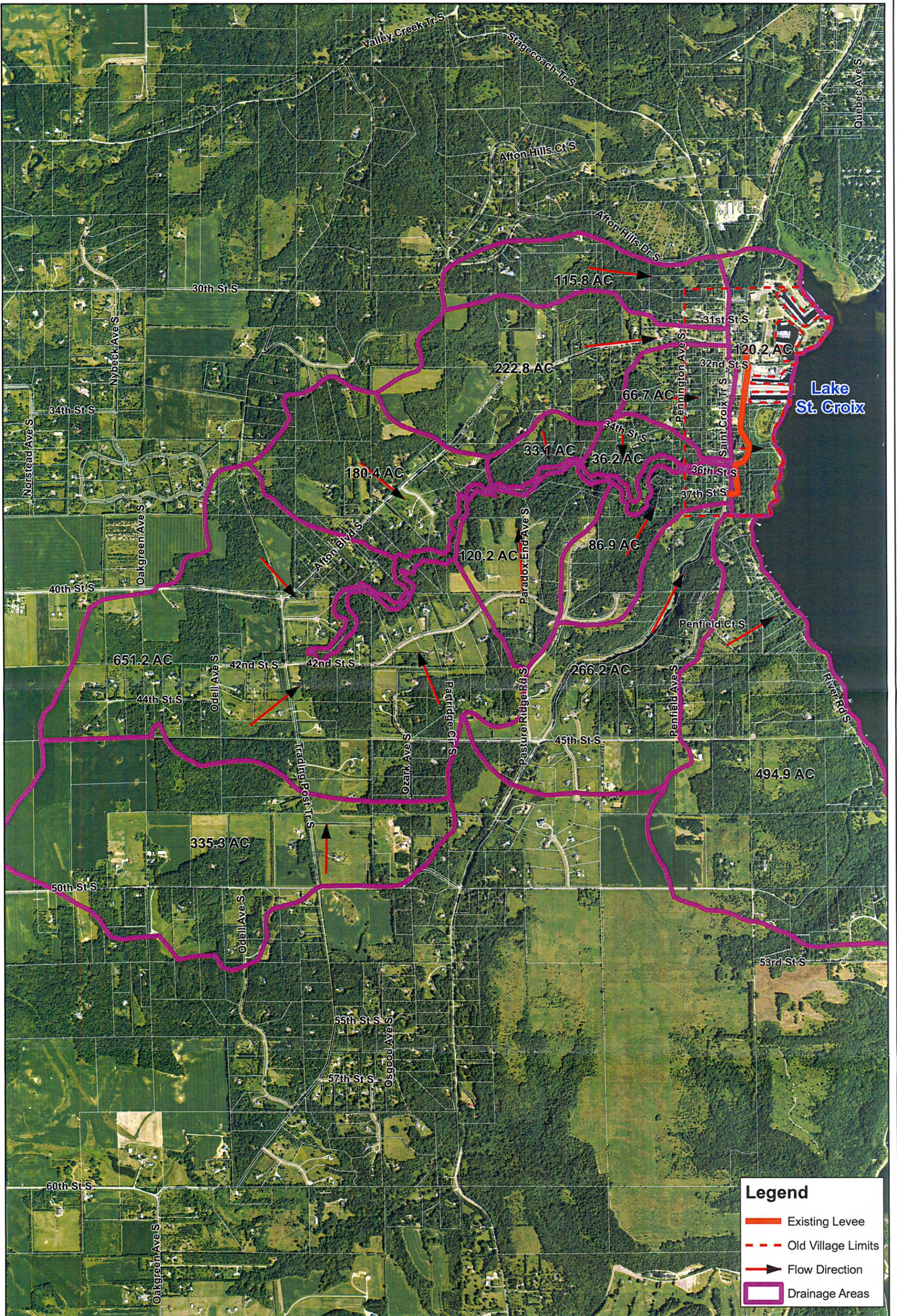
Levee Options

- Option 1 (Existing)
- Option 2
- Option 3

N

0 400
Feet







Legend

Sanitary Sewer

- Manholes
- Pump Station
- Sewer
- Force Main

*Task Force Recommendations
for Infrastructure Improvements
in the Old Village*

Figure 5: Sanitary System Concept



APPENDIX A

Task Force Meeting Minutes

Old Village Task Force
February 17, 2010
7:00 PM

Greeting by Councilmember Palmquist

A self-introduction was made by everyone in attendance with short explanation of goals and expectations of the task force.

Todd Hubmer discussed how the task force will set its own agenda, while staff and consultants would provide support. He also explained that there are good opportunities for financial assistance from state, federal and other sources that could make many of the villages needs attainable. He also suggested ground rules and the need to be respectful of different opinions.

Diane Hankee provided a review of the comments received at the open house held on January 27. Task Force (TF) members provided some comments that were not included in the notes collected the evening of the open house. A short discussion about the approach to addressing problems then followed.

Hubmer listed issues (or components) that were being discussed on the large “white board”, which included:

Vision

Natural environment- *Sustainable, Clean Marinas, MnPCA Clean Step Program*

Connection to river- *River water quality*

Pedestrian friendly- *Wide sidewalks, Utilities underground, Place to go (destination), point of interest, educational, Traffic calming street design (slower speed), Steamboat Park- passive uses*

Village- *Intimate, not auto dominate, “haven”*

Stormwater Management- *pervious pavement,*

History- *Find elements*

Connection & respect for the past- *4th of July, “Quaint” image*

CR 21- *Construction implications, landscaping, streetscaping (relates to traffic calming)*

Long term perspective- *visionary approach*

Economic Viability- *Development density*

Traffic routing Afton Alps through Village

Obstacles

Finances (financing)

Fear of change

Funding agency requirements

Imperious surface requirements

Empty lots/decaying structures

Next steps

An informal vote was taken by secret ballot earlier in the meeting and the following results were announced.

Bill Baglio- 14 (one vote Vice Chair)

Bobbie Elston- 3 (one vote Vice Chair)

Gordy Jarvis- 1 (three votes Vice Chair)

Bill Baglio received the most votes and will serve as TF Chair, and a consensus was reached that both Bobbie Elston and Gordy Jarvis serve as Vice Chair.

Homework

The combination of these lists led to a third list; "Homework"

1. Write down what the Village feel means to you and how it can be maintained. Send photos to Diane Hankee and week before the next meeting.
2. Martin Stern would make a presentation of Green Step program.
3. Sustainability (Elstons)
4. septic issues

Next meeting 3rd Wednesday in March.

Old Village Task Force
March 17, 2010
7:00 PM

1. Meeting started by Chair Bill Baglio
2. Presentations

- a. Green Step Program – MPCA

Philip Muessing discussed the programs available to the City and provided Green Step City Best Practice # 11 (attached)
Suggested narrow streets and Complete Streets
Community Forestry Coordination
Design team board – Utilize students to create innovative design.

- b. Equaris Corporation – Clint and Bobbi Elston

WCCO news coverage (www.equaris.com)

Presentation – Conventional sanitary treatment summary verses decentralized treatment. Separator system that creates natural fertilizer and can be expanded to recycle water. Each house would have its own system. Estimated cost of the separator compost system is \$15,000, with water recycling it would be \$50,000. Still need drain field for grey water.

Everybody is welcome to come up the house and see the system

- c. Afton House Environmental Assessment Worksheet (EAW) Summary

Gordy Jarvis (Paul Brant) summary of what was included in EAW. Look at options for Sanitary and Stormwater.

3. Summary of last meeting and review of photos.

- ✓ Positives are natural environment and business well up kept and the character of the businesses. River frontage is a parking lot mainly 33rd St. Winter is the only time you can see the river and it is blocked by boats.

Beautify park alternative to chain link fencing. Power lines impacting the feel and is not aesthetically pleasing. Use 34th right of way to connect parks. Fishing pier for access. Include streams into pedestrian walk ways. Kell's Creek keep the pedestrian bridge.

Keep small town feel similar to existing streets. Old river town feel, no plastic flower pots, not like Stillwater. Narrower streets, streets have gotten wider over time. Cars are more important than people because of the wide asphalt.

Looked at national preservation of downtowns (www.guidingstar.ca) example Unionville Toronto.

Reviewed City's goals for overall funding. Concerns about City being able fund their local share. Talked about potential taxing district.

4. Priority Discussions

a. Sanitary Sewer

i. Local Collection system serving the downtown

ii. Decentralized separation system

Service Area – Y to Y and 201. From the River to the bluff (possibly include Pennington).

EAW included bluff to River and from south Y to care center and market square building and two houses next to City hall. Didn't include homes on the west side.

Boat sewage has chemicals in it and is hauled out.

Next meeting Wednesday, April 21, 2010.

GreenStep City Best Practice # 11

www.MnGreenSteps.org

- draft -

❖ **Complete Green Streets:** Create a network of multimodal green streets.

Required for large cities

Category: Land Use

Summary

A well-designed green street network puts in place infrastructure that can deliver multiple benefits to a city: improved safety and mobility for cars, trucks, transit vehicles, bikes and pedestrians; increased walking and biking and community health; reduced emergency response times; a healthy tree canopy and reduced and cheaper stormwater management; more inviting public spaces and increased economic viability of businesses.

Best Practice Actions

Take at least action (1) below to implement this best practice:

- (1) Adopt a complete streets policy that addresses street trees and modify street standards accordingly.
- (2) Document the installation of trees, and rain gardens or other green stormwater infrastructure, and sewer/water/telecommunications renovations as needed, as part of at least one street reconstruction project.
- (3) Identify and remedy non-complete street segments (at least one) to better facilitate walking and biking.
- (4) Identify and remedy gaps (at least one) between city streets and trails/bike trails to facilitate walking and biking.
- (5) Implement traffic calming measures in at least one street redevelopment project.
- (6) Adopt level of service standards for street types that include pedestrian and bicycle performance goals for street design.
- (7) Adopt zoning language for selected areas/uses/projects substantially equivalent to the LEED for Neighborhood Development credits for Walkable Streets or Street Network (average street grid density over 20 centerline miles/sq. mile).

See related best practices: *Efficient Stormwater Management* (for incorporating green stormwater infrastructure into streets); *Urban Forests* (for boulevard tree installation guidance); *Green Infrastructure* (for connecting roads and trails for bicycle and pedestrian transportation).

GreenStep Advisor

- Tim Mitchell, Bicycle & Pedestrian Section Director, Minnesota Department of Transportation: 651/366-4162, tim.mitchell@state.mn.us

Implementation Resources

- MN Dept. of Transportation sites - Complete Streets, pedestrian and bicycling resources: <http://www.dot.state.mn.us/planning/completestreets>, <http://www.dot.state.mn.us/peds>, <http://www.dot.state.mn.us/bike>
- MN Complete Streets Coalition: <http://www.mncompletestreets.org/>
- *Best Practices Manual on Complete Streets* and other resources (American Planning Association: 2010): <http://www.planning.org/research/streets>
- *Context Sensitive Solutions in Designing Major Urban Thoroughfares for Walkable Communities* (Institute for Transportation Engineers, Congress for the New Urbanism: 2006): http://www.nextstep.state.mn.us/res_detail.cfm?id=2224
- *Green Streets* (EPA: 2009), a well-illustrated conceptual guide to effective design of alleys and residential, commercial and arterial streets to reduce stormwater flow, improve water quality, reduce urban heating, enhance pedestrian safety, reduce carbon footprints, and beautify neighborhoods: http://www.epa.gov/npdes/pubs/gl_aura_green_streets.pdf

- Maplewood has budgeted rain gardens as part of all street reconstruction work since 1996: <http://www.ci.maplewood.mn.us/index.aspx?NID=456>
- The Dakota County Office of Planning did a gap analysis for the county in 2009.
- Traffic calming resources, including roundabouts, from the Minnesota Local Road Research Board and others: http://www.nextstep.state.mn.us/res_detail.cfm?id=1964 and http://www.nextstep.state.mn.us/res_detail.cfm?id=2057
- Emergency response and narrower street design: http://www.nextstep.state.mn.us/res_detail.cfm?id=4184
- *GreenLITES* (Leadership In Transportation and Environmental Sustainability), a scorecard for transportation projects based on the extent to which they incorporate sustainable design choices: http://www.nextstep.state.mn.us/res_detail.cfm?id=4140
- LEED for Neighborhood Development: <http://www.usgbc.org/leed/nd>

Benefits

- Modest street and lane reconfigurations, attending to context sensitive street design principles and adding traffic-calming measures, can reduce speeding by 40%, accidents by more than 50% and increase the number of walkers and bikers.
- Benefit-cost analysis of bicycle facilities at <http://www.bicyclinginfo.org/bikecost/>
- Quantitative measures of the degree to which a neighborhood facilitates people to walk in it: http://www.nextstep.state.mn.us/res_detail.cfm?id=2104
- Narrower vehicle lanes result in safer streets that carry more cars up to 40 m.p.h.: http://www.nextstep.state.mn.us/res_detail.cfm?id=2057
- The energy savings from no signals and no/little idling at roundabouts, compared to signalized intersections, has been estimated to be about 9%. As for safety benefits of roundabouts, a comprehensive study by the Insurance Institute for Highway Safety (<http://www.highwaysafety.org>) documented a reduction of as much as 90% in fatal or incapacity injuries, a 75% decrease in injury-producing crashes, and a 39% decrease in all types of traffic accidents. Roundabouts also slow traffic, reducing the need for police patrols.

Connection to State Regulations

- A state-wide complete streets policy will be considered by the 2010 Legislature.
- The Statewide Health Improvement Program (SHIP: <http://www.health.state.mn.us/healthreform/ship/index.html>) distributes funding to Community Health Boards and tribal governments across Minnesota to create community action plans, assemble community leadership teams, and establish partnerships to improve the health of Minnesotans. Grantees utilize policy, systems, and environmental changes in four settings: schools, worksites, health care, and community. Two relevant SHIP interventions (details at http://www.health.state.mn.us/healthreform/ship/SHIPREFP_Section3.pdf) are:
 - #C-PA-S1: Implement policies and practices that create active schools by increasing opportunities for non-motorized transportation (walking and biking to and from school) and access to school recreation facilities,
 - #C-PA-C1: Implement policies and practices that create active communities by increasing opportunities for non-motorized transportation (walking and biking) and access to community recreation facilities.

GreenStep City Best Practice # 17

www.MnGreenSteps.org

draft

❖ **Efficient Stormwater Management:** Prevent stormwater generation.

Required for large cities.

Category: Environmental Management

Summary

Increased stormwater runoff and water pollution can easily accompany land use changes and urbanization, negatively impacting aquatic and groundwater systems, compromising clean drinking water and fishable, swimmable waters that support diverse life. Using a low-impact development, green stormwater infrastructure approach, stormwater generation is minimized, managed on-site and the rate and volume of predevelopment stormwater reaching receiving waters is largely unchanged.

Best Practice Actions

Take at least one of the following actions to implement this best practice:

- (1) Complete the Blue Star City stormwater management assessment and achieve a minimum threshold of specific activities detailed in this program.
- (2) Adopt by ordinance one or more of the following:
 - a. A narrower streets provision allowing 22-foot roads.
 - b. A 1.5 inch rainfall on-site rainwater infiltration design requirement for construction sites.
 - c. A 25% impervious surface area maximum provision (% of a new development project area)
 - d. A stormwater runoff volume limit to pre-development volumes for the 5-year 24-hour rainfall event.
- (3) Maintain less than 12% impermeable surfaces in the watershed in which the city lies.
- (4) Create a stormwater utility, which uses variable fees to incentivize stormwater reduction and pay for community stormwater infrastructure and assistance.
- (5) Adopt and implement rain garden, green alley or green parking lot design standards or guidelines for renovations or new construction in the city.
- (6) Modify as needed and adopt the model *Stormwater and Erosion and Sediment Control Ordinance* (Minnesota *Model Sustainable Development Ordinances*: 2009).

GreenStep Advisors

- Anne Gelbmann, green stormwater infrastructure specialist, MPCA: 651/757-2384; anne.gelbmann@state.mn.us
- Trevor Russell, Watershed Program Director, Friends of the Mississippi River: trussell@fmr.org, 651/222-2193, x18

Implementation Resources

- Friends of the Mississippi River Blue Star Recognition Program: www.fmr.org
- *Better Site Design: A Handbook for Changing Development Rules in Your Community* (Center for Watershed Protection, 1998): http://www.nextstep.state.mn.us/res_detail.cfm?id=335
- *Urban Small Sites Best Management Practice (BMP) Manual* (Metropolitan Council: 2001): http://www.nextstep.state.mn.us/res_detail.cfm?id=922
- *Minnesota Stormwater Manual* (MPCA: 2005): <http://www.pca.state.mn.us/water/stormwater/stormwater-manual.html>
- Rain garden resources from the cities of Burnsville and Maplewood: http://www.nextstep.state.mn.us/res_detail.cfm?id=1449
- *The Chicago Green Alley Handbook* (2007): http://www.nextstep.state.mn.us/res_detail.cfm?id=4024 Note that Shoreview and Owatonna, Minnesota have installed porous alleys.

- Toronto's *Design Guidelines for 'Greening' Surface Parking Lots* (2007) and a prototype downtown Minneapolis low-impact parking lot (University of MN Metropolitan Design Center: 2004): http://www.nextstep.state.mn.us/res_detail.cfm?id=4057
- Run-off from parking lots sealed with coal tar, which contains known human carcinogens, can contaminate stormwater pond sediments, making them a hazardous waste, disposal of which is extremely expensive for a city. See model ordinance language on use of sealants for local units of government, developed with the League of MN Cities, at <http://www.pca.state.mn.us/water/stormwater/stormwater-coaltar.html>
- *2009 Minnesota Model Ordinances for Sustainable Development - Stormwater and Erosion and Sediment Control Ordinance*: <http://www.cplanning.com/susdo.htm>
- U.S. EPA green infrastructure resources: http://efpub2.epa.gov/hpdes/home.cfm?program_id=298
- *Water Quality Scorecard: Incorporating Green Infrastructure Practices at the Municipal, Neighborhood, and Site Scales* (U.S. EPA: 2009): http://www.epa.gov/smartgrowth/water_scorecard.htm

Benefits

- *Stormwater BMP Performance Assessment and Cost-Benefit Analysis* (St. Paul's Capitol Region Watershed District: 2010): <http://www.capitolregionwd.org>
- National Green Values™ Calculator, a tool for quickly comparing the performance, costs, and benefits of Green Infrastructure, or Low Impact Development, to conventional stormwater practices. Estimates include annual and life cycle benefits of reduced air pollutants, carbon dioxide sequestration, compensatory value of trees, groundwater replenishment, reduced energy use, and reduced water treatment benefits. (Chicago's Center for Neighborhood Technology: 2009): <http://greenvalues.cnt.org/national/calculator.php>
- Low-impact development was simulated for an existing development in Lakeville, MN and several financial and environmental benefits were calculated: http://www.nextstep.state.mn.us/res_detail.cfm?id=2434

Connection to State Policy

- Recognition as a Blue Star City may secure MPCA credits on MS4 permits and secure the MPCA MS4 audit credit.

GreenStep City Best Practice # 16

www.MnGreenSteps.org

draft

❖ *Urban Forests: Increase city tree and plant cover.*

Required for medium & large cities

Category: Environmental Management

Summary

Investment in a city's green infrastructure, which includes trees and other plant cover, has benefits – financial, quality of life, carbon sequestration and others - just as do investments in a city's traditional infrastructure of roads, sewers, and gas, electric and telecommunications lines.

Best Practice Actions

Take at least one of the following actions to implement this best practice:

- (1) Qualify as a Tree City USA joining 140 other cities in MN, which requires a city to:
 - (a) Establish a tree board or department
 - (b) Pass an ordinance on tree care
 - (c) Establish an annual tree budget of at least \$2 per resident
 - (d) Plan an annual Arbor Day celebration
- (2) Adopt as policy the Sustainability Guidelines & Best Practices developed in Minnesota by Tree Trust and Bonestroo and achieve at least 20 points on this checklist.
- (3) Budget tree installation to, within 15 years, achieve the following tree canopy shading for streets, sidewalks and parking lots citywide: at least 25% for industrial and urban core zoning; at least 75% for residential.
- (4) Maximize tree planting along your main downtown street, ideally as part of main street revival effort including road and parking improvements.
- (5) Adopt, with modifications as necessary, model Natural Resources Performance Standards addressing woodlands, native upland plant communities, wildlife, and steep slopes and bluffs.
- (6) Implement at least two of the practices below.
 - (a) Enact standards, such as street design standards, that incorporate street trees and native vegetative cover into public right-of-ways.
 - (b) Enact ordinances to protect trees in the development process and to enhance the urban forest.
 - (c) Adopt a policy of no net loss of natural landscapes. For example, city activities that remove forested areas, or individual trees, could require replacement at a 3:1 ratio.
 - (d) Adopt landscaping performance standards that specify tree cover and other vegetation to be used in parking areas, maintenance yards and in other areas of mostly impervious surface.
 - (e) Adopt landscaping/nuisance ordinances that promote, rather than create barriers for, native vegetation.

GreenStep Guide

- Ken Holman, Community Forestry Coordinator, MN Department of Natural Resources: ken.holman@dnr.state.mn.us, 651/259-5269.

Implementation Resources

- Tree City USA, a program of the national Arbor Day Foundation: <http://www.arborday.org/programs/treeCityUSA/index.cfm>
- *City Trees: Sustainability Guidelines & Best Practices* (Tree Trust, Bonestroo, 2007): <http://www.bonestroo.com/More/?ID=3&v=t>
- *2009 Minnesota Model Ordinances for Sustainable Development*: <http://www.crplanning.com/susdo.htm>
- *Energy Conservation Through Trees* (Dept. of Natural Resources): <http://www.dnr.state.mn.us/treecare/energy/index.html>

Quantification of Benefits

- Protocol for calculating the carbon reductions from urban forestry - <http://www.arboday.org/programs/treeCityUSA/index.cfm>
- Software including CITYgreen (<http://www.americanforests.org/productsandpubs/citygreen/>), STRATUM (<http://www.itreetools.org>) and UFORE (<http://www.ufore.org>) help communities measure tree canopy cover and the value of community trees for energy savings, stormwater management, carbon sequestration, air pollution reductions, and property value enhancement.
- Among 2005 US Forest Service studies at <http://www.mntrees.org/payback.cfm> are data showing that single trees in southern or central Minnesota can generate a net benefit (total benefits minus initial and annual maintenance costs) of \$160 - \$3,040 during a 40-year period. The nearly 200,000 public trees in Minneapolis alone provide a total gross annual benefit of \$24.9 million. Benefits analyzed are:
 - *energy savings and reduced CO2 emissions*: shading/wind breaks reduce residential energy used in air conditioning and heating (25% in summer and 20% in winter)
 - *increased property values*: humans are hard-wired to value the natural world and will pay 9% more for a house with a tree within 50 feet
 - *beauty and all the resulting intangible personal/mental health and social benefits*
 - *improved retail sales in tree-rich commercial districts*: people have been found to spend up to 12% more on products if they are shopping in a district with mature trees
 - *increased life of asphalt*: shading reduces degradation
 - *reduced stormwater runoff and improved water quality*: old growth trees can decrease runoff by 59%
 - *improved air quality*: trees filter pollutants (90 lbs. of CO2, 3 lbs. of particulates and 4 lbs. of ozone per large tree per year)
 - *improved wildlife habitat*
 - *reduced crime*: one study demonstrated that apartment buildings with high levels of greenery had 52% fewer crimes than those without greenery
 - *noise reduction*
- Studies have demonstrated how direct contact with vegetation or nature leads to increased mental health and psychological development: <http://www.designforhealth.net/resources/mentalhealthissue.html>

Connection to State Regulations

- Designation as a Tree City U.S.A. may earn a MS4 and TMDL implementation credit.
- Use of trees is an optional measure in the Minnesota Green Communities Criteria, used by the Minnesota Housing Finance Agency in awarding funding for building affordable green multi-family housing.

GreenStep City Best Practice # 18

www.MnGreenSteps.org

- draft -

* *Green Infrastructure: Enhance city parks and trails.*

Category: Environmental Management

Summary

Along with city trees, city parks and trails soften our daily life spent in buildings, satisfying an innate affinity for the natural world. These green and open spaces can be a defining feature of a city, providing civic gathering spaces, venues for exercise and cost-free recreation, and connections to open space beyond city limits. City parks and trails provide many important ecosystem services, including the purification of air, reduction in urban heat island effect, stormwater management, wildlife habitat, and carbon sequestration. Parks and trails are also economic development tools, increasing property values in their vicinity. And finally, trails can serve important transportation functions, connecting recreational destinations, job centers, retail centers, schools, neighborhoods and points beyond the city.

Best Practice Actions

For cities that choose to implement this best practice: Medium-sized cities must implement at least two actions below, and large cities must implement three.

1. Identify gaps and connectivity breaks in your city's system of parks, sidewalks, trails and open spaces, and remedy at least one of them (by, for example, acquiring a high quality natural area or priority stormwater management area, or by connecting to a trail outside your city).
2. Plan and budget for a network of parks, green spaces, water features and trails in all new development areas. These should be integrated into the City Parks, Open Space & Trail Plan, provide sidewalk, trail and/or bikeway rights-of-way for connecting to parks, open spaces, and trails beyond city limits, and can be funded by park dedication fees.
3. Achieve a threshold of at least 20% of total city land area in protected green infrastructure (parks and protected natural resource areas and trails).
4. Document that at least 90% all residents are within a ½ mile of a park or protected green space.
5. Adopt low-impact design standards in parks and trails that infiltrate or retain all 2 inch, 24-hour stormwater events on site.
6. Create park management standards that maximize (a) low maintenance native landscaping and (b) organic or integrated pest management, and (c) sources of non-potable water for irrigation as possible.
7. Certify golf course(s) as Audubon Cooperative Sanctuary Program for Golf Courses.
8. Construct all new park buildings to a green building standard, with special attention to building an environmental education around features such as renewable energy generation capacity, native landscaping, rain gardens, green roofs and composting toilets/greywater systems.
9. Develop a program to involve community members in land restoration and stewardship.

GreenStep Advisor

- * Emmett Mullin, director, strategic planning, MN Dept. of Natural Resources: 651/259-5556, Emmett-mullin@state.mn.us

Implementation Resources

- * Minnesota Local Trail Connections Grants: http://www.dnr.state.mn.us/grants/recreation/trails_local.html
- * Minnesota Recreation and Park Association: <http://www.mnrpa.org/> and <http://www.bestpracticesmn.org/>
- * *Trail Planning, Design, and Development Guidelines* (DNR: 2007): http://www.dnr.state.mn.us/publications/trails_waterways/index.html
- * 90% of St. Paul residents are within a ½ mile of a park or protected green space and 20% of the total city land area is protected green infrastructure.

- Audubon Cooperative Sanctuary Program for Golf Courses: (<http://acspgolf.auduboninternational.org>)
- Golf and pesticides: <http://www.beyondpesticides.org/golf/index.htm>
- Great River Greening assistance for working with volunteers: www.greatrivergreening.org
- Shared parks in urban blocks: (<http://www.communitygreens.org/>)
- The Sustainable Sites Initiative's *Guidelines and Performance Benchmarks 2009*: <http://www.sustainablesites.org>
- *Using Renewable Energy in Minnesota Parks: A Guidebook for Park Managers* (Center for Energy and Environment: 1999): http://www.mncee.org/pdf/tech_pubs/parkguide.pdf
- MN Solar Energy Legacy Grants from DNR, 2009-2011: http://www.dnr.state.mn.us/grants/recreation/se_legacy.html

Benefits

- *The Economic Value of Open Space: Implications for Land Use Decisions* (Twin-Cities-based Embrace Open Space: 2005) and other studies: http://www.nextstep.state.mn.us/res_detail.cfm?id=113
- Background on the psychological and economic benefits of natural spaces: http://www.nextstep.state.mn.us/res_detail.cfm?id=1329
- Studies have demonstrated how direct contact with vegetation or nature leads to increased mental health and psychological development: <http://www.designforhealth.net/resources/mentalhealthissue.html>

Connection to State Policy

Old Village Task Force
April 21, 2010
7:00 PM

1. Meeting started by Chair Bill Baglio

Discussed how the Village should be a positive area in Afton. Residents within the City should come together to make this better community for all. The needs to be change in the Old Village.

2. Priority Discussions

a. Washington County – Wayne Sandberg

The County has not started the design for CR 21. Need to balance the roadway function with the needs of the property owners. The project is currently not in the County's Capital Improvement Plan. The County would like to work to serve the community's needs and ask that the residents keep an open mind as what needs to be included to maintain safety.

The County has found ways to work through Old Town areas in other communities while still balancing the truck traffic and large truck turning movements. The County is open to pervious pavements and traffic calming designs.

Task force would like to see a parking area that is delinated from the main roadway. Bump outs are a concept that they would like to consider for pedestrian safety. Encourage pedestrian traffic; cycle traffic will be considered but similar to cars will most likely have to slow down. Staff will work with the County to bring back typical sections options.

b. Martin Stern – The flooding has left garbage and debris. People should consider picking up some of the garbage. City is working on setting a clean up day.

c. Old Village and Economic Impact

Concerned about the future of the Old Village.

d. Stormwater

We are considering a natural river bed in lieu of a convential stormwater pipe system. We submitted this idea for grant funds through the LCCMR.

Ideas to deal with Kelle's Creek during flood situations include a bypass that would be used only in flood situations or consider holding back some of the water. Other options can be made known.

e. Sanitary Sewer Service Area

Staff is considering options for sanitary sewer. Options include decentralized sanitary sewer and a local collection and treatment system. Cost estimates are being worked on. Staff will bring back cost estimates.

Added a couple of properties along 36th Street to the service area presented. Consider additional capacity in systems.

f. Levee function and location

Staff presented three options:

Option 1 – Same location

Option 2- North (reach 1) remains the same then head south from 35th Street

Option 3 – Straight from north to south

Idea to use area of the exiting levee for stormwater quality if it was moved. Would still like to have a pathway on the levee.

Bring back costs to options for dealing with flooding. Flood proofing option and purchasing out. The only threat of the flooding was to the septic systems and drain fields.

3. Funding Update

4. Agenda Item for next meeting -- Steamboat Park

5. Next meeting Wednesday, May 26, 2010. Rescheduled for Thursday **May 27, 2010.**

Old Village Task Force
May 27, 2010
7:00 PM

Meeting started by Chair Bill Baglio.
Introduced the new City Administrator Ron Moorese.

1. Task Force Work Product

City Council has asked for a summary of the work product from the Task Force. Staff suggested the work product include:

- a. Downtown aesthetics and culture as discussed in the first two task force meetings.
- b. Trail connections and conductivity. Connect the County trail through the downtown from the north to the south possibly on the levee. Connect the two parks together and have a multi use path or walk along CR 21.
- c. Flood mitigation recommendation based on needs and future occurrences.
- d. Sanitary system recommendation.
- e. CR 21 features.

2. CR 21 – Main Street

- a. Washington County Design Process– Wayne Sandberg and Cory Slagle

Wayne clarified that the Task Force is not the entity that will design CR 21. The group is to give concepts. The project needs to be on CIP before the design and public input process can begin. The process takes 5-7 years. Shortcuts are problematic and can lead the project falling apart. Land acquisition takes a year and a half to compete alone.

The City has requested the project be included in the County CIP for 2012. The County is concerned with this short period of time and that a schedule needs to be discussed further if the County Board agrees to fund the project. The project could be phased to help the City leverage State funding. The project maybe funded through bonding, State Aid, or Federal Aid. The first step is for the County to fund the project, and include it in the CIP.

A typical County project process and time line was presented and is attached.

Wayne summarized the task force goal for the Village from the February 17, 2010 meeting.

- b. Design example pictures for CR 21 were presented to the group. As summary will created by staff for the task force review at the next meeting.

3. Sanitary Sewer

Staff provided a summary of the options and introduced Chris LeClair from Washington County Public Health and Environment. In 2006 the MPCA came to Washington County and asked them who needed centralized sanitary treatment and the old village of Afton was on the top of that list. This was based on concerns over the multiple needs in the village. The needs include the fact that drain field replacement cannot be accommodated in the old village area. Most of the parcels are at or below the 10 year flood elevation. Systems are to be installed above the 10 year flood elevation. A summary of failure levels and quantity of properties (addresses and names will not be included) will be provided at the next meeting.

Staff reviewed cost estimates for three types of sanitary treatment (enclosed):

- a. SSTS System
- b. Point Source Treatment
- c. Local Collection and Treatment

The estimated costs were based on a 50 yr life span. Clint and Bobby Elston felt that the Point Source Treatment costs were incorrect. The group requested that they supply updated costs including more details on the cost to retrofit a property.

4. Flood Mitigation

The options for Flood Mitigation with estimated costs were presented as requested by the group last month (attached):

- a. Levee Reconstruction and Realignment
- b. Flood Proofing Structures in the Floodplain

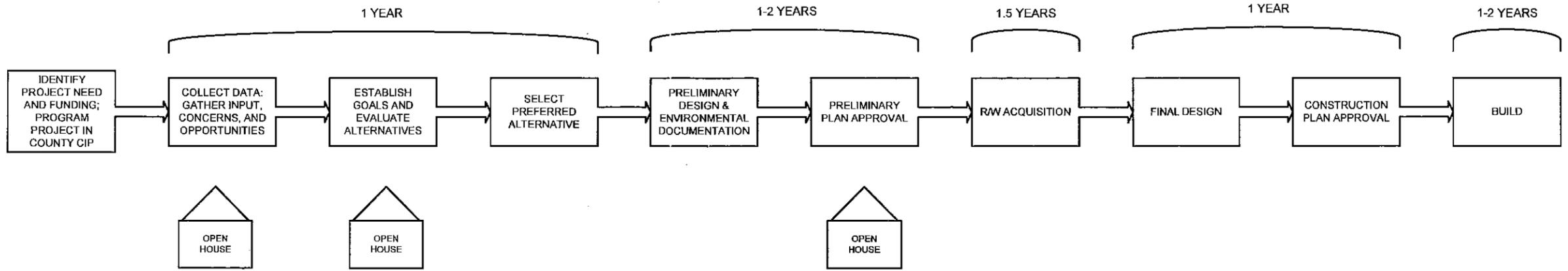
Staff reviewed the costs and fact sheet. Patrick Waletzko from Washington County Emergency Management was present and commented that either option is a viable and lessen the impacts. FEMA has grants for pre disaster and prefers buyouts as their first option. Still eligible for NIFP and that insurance rates maybe reduced if flood proofed and with the new FEMA mapping LOMA may be required.

The group discussed the recommendation and would like to suggest the levee replacement.

5. Agenda Item for next meeting -- Sanitary sewer; and task force work produce summaries.
6. Next meeting 7:00 pm Wednesday, June 23, 2010.

Highway Project Development Process

What is the process?



Who has input?

- ALL PROJECT STAKEHOLDERS
- PUBLIC TRANSPORTATION DESIGN REVIEW COMMITTEE
- RESIDENTS
- PROPERTY OWNERS
- BUSINESS OWNERS
- CITY
- SCHOOL DISTRICTS
- INTEREST GROUPS
- PUBLIC TRANSPORTATION DESIGN REVIEW COMMITTEE
- RESIDENTS
- CITY COUNCIL
- COUNTY
- DNR
- ENVIRONMENTAL AGENCIES
- SCHOOL DISTRICTS
- BUSINESSES
- UTILITY COMPANIES
- MNDOT
- FHWA
- ELECTED OFFICIALS
- TRANSPORTATION DESIGN REVIEW COMMITTEE (RECOMMENDATION)
- CITY COUNCIL (APPROVAL)
- COUNTY (RECOMMENDATION)
- REGULATORY AGENCIES
- STATE AND FEDERAL AGENCIES
- PUBLIC
- PUBLIC TRANSPORTATION DESIGN REVIEW COMMITTEE
- CITY COUNCIL
- IMPACTED PROPERTY OWNERS
- CITY
- COUNTY
- AESTHETIC COMMITTEE
- CITY
- COUNTY
- CITY COUNCIL
- PUBLIC TRANSPORTATION DESIGN REVIEW COMMITTEE
- TRANSPORTATION DESIGN REVIEW COMMITTEE (RECOMMENDATION)
- CITY COUNCIL (APPROVAL)
- COUNTY (RECOMMENDATION)

Old Village Task Force
June 23, 2010
7:00 PM

Meeting started by Chair Bill Baglio.

1. Task Force Recommendation for Infrastructure Needs Review

Staff reviewed the issues and needs for comment:

- CR 21 and local streets in the Old Village are in poor condition and in need of reconstruction.
- CR 21 needs to reflect the vision and function of the City and Washington County.
- Safe pedestrian access to all points of interest.
- Trail connection through the Old Village.
- Sanitary sewage treatment consists of individual septic systems, many of which are failing due to ground and surface water contamination.
- Many septic drain fields are located within the embankment of the existing levee.
- Expansion of existing commercial businesses and residential improvements cannot be undertaken with the current condition of the septic and drain field systems.
- The existing levee is not FEMA accredited and does not protect the Old Village from the 100-year flood event.
- Flooding of the Old Village causes wear on the City's infrastructure and results in significant flood preparation, response, and cleanup costs.
- The existing Old Village drainage system does not provide water quality treatment prior to discharge into Lake St. Croix.
- The City of Afton has limited resources to address all of the infrastructure needs in the Old Village area. Therefore, the City is pursuing grants, partnerships, and financial assistance from other sources to assist in addressing of the needs.

Gordy suggested that Economic Impact be added with consideration and that the City ordinances need to be reviewed as part of the process on improving the downtown.

a. Downtown aesthetics and culture – CR 21 staff reviewed:

- Emphasize the natural environment
- Emphasize connectedness to the St. Croix River
- Pedestrian Friendly
- Create a Village Atmosphere
- Consider unique/new stormwater management techniques

- Emphasize the historic nature of Afton
- Develop a long term solution
- Promote economic viability
- Obtain Input from all stakeholders
- Recognize the needs for CSAH 21

Use traffic calming features and reduce the existing roadway. The task force also recommends pervious pavers to further reduce stormwater volumes and aid in water quality improvements. Improving parking areas with bump outs, providing multiple crosswalks, and burying the overhead utilities are also recommended by the task force as ways to improve the appearance and atmosphere of the Old Village along County Road 21.

The County has concerns about snowplowing, infiltration basins, and general maintenance surrounding some of the task force recommendation. The County will be completing a more involved public process during the preliminary and final design process for CSAH 21.

b. Trail Connections and Pedestrian Access

The task force recommends connecting the Regional Trail at the north end of town with the south end of town for future extension to Afton State Park. The recommended alignment is a trail located on top of the levee. It is recommended that crosswalks be constructed throughout town to provide improved access to businesses, and parks. Wide sidewalks that have a welcoming feel are also recommended along County Road 21. Overall need to improve pedestrian safety in the Old Village.

Removed - Designating a portion of County Road 21 to cyclists is recommended to provide for safe riding in the roadway and allow for undisturbed walking and other activities on the sidewalk.

There was a safety and maintenance concern from Emergency Management regarding a trail on the levee. Locating the pathway on the levee is still a recommendation of the task force.

c. Flood mitigation The options for Flood Mitigation with estimated costs were presented as requested by the group last month (attached):

- i. Levee Reconstruction and Realignment
- ii. Flood Proofing Structures in the Floodplain

After working with Emergency Management the costs were updated and will be included in the report.

The task force reviewed the costs comparisons and the cost to reconstruct the levee was lower based on the City's previous levee study and the flood proofing grant from 2005. Also discussed was the potential funding opportunities. Funding is available from the DNR to reconstruct the levee (50/50 match, the City is in the State bonding bill for Flood Mitigation). FEMA funding to flood proof would need to be pursued. Staff expressed a concern over City infrastructure if roadways were to remain in the flood plain. After considering the previous, the task force recommended the option to reconstruct the levee and achieve FEMA accreditation.

d. Drainage Summary

Many discussions about the existing conditions and possible improvements lead the task force to recommend a stormwater collection system with volume control and infiltration close to the source. Concepts recommended include: porous pavers in parking areas and on portions of CSAH 21 and local streets, biofiltration (rain gardens) and natural vegetation along the roadway, irrigation reuse at City Park, and runnels along the roadway. The runnels would function as an open channel system to collect and convey stormwater. The stormwater system would have a natural appearance and encourage infiltration through all of the concepts recommended.

2. Sanitary Sewer

Staff reviewed data from the survey that was conducted in the spring of 2010 of the SSTS in downtown Afton. Of the 95 properties in the project area, there are approximately 25 systems that are non-compliant: one is an imminent threat to public health and safety, 35 systems are failing to protect groundwater, and 15 systems are non-conforming because they do not meet setbacks to lot lines, wells, etc. The remaining 44 systems are compliant. The area studied included Pennington and the 201 services area.

Staff reviewed cost estimates for three types of sanitary treatment (enclosed):

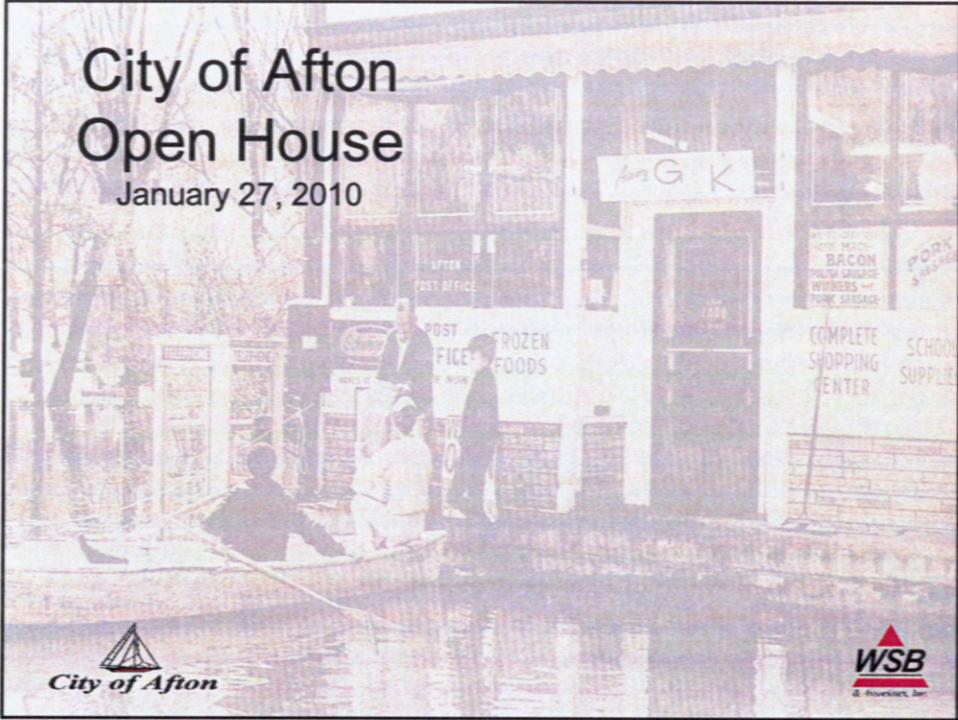
- a. SSTS System
- b. Point Source Treatment
- c. Local Collection and Treatment

The estimated costs were revised based on information from Clint and Bobby Elston. The information they submitted was provided. Staff is willing to meet with task force members to explain any portions of the report or cost estimates.

The recommendation to Council is that the septic issues need to be addressed in the Old Village and this was a priority.

APPENDIX B
Task Force Presentations

**THE COST ESTIMATES PROVIDED IN THE
PRESENTATIONS WERE UPDATED IN THE
FOLLOWING MEETING**



Old Village of Afton

- **Possible Funding Opportunities**
 - **Federal**
 - Rural Development
 - US ACOE
 - FEMA
 - **State**
 - Minnesota DNR
 - Public Facilities Authority (PFA) – MPCA
 - **Local**
 - Washington County
 - Valley Branch Watershed District
 - Board of Water and Soil Resources (BWSR)



Public Task Force

Opportunity for Residents and Business Owners to Get Involved

- **Identify issues**
 - Flooding
 - Drainage
 - Access and mobility
 - Infrastructure
- **Provide information on existing conditions**
- **Develop solutions**
- **Financing**



Public Task Force

Proposed to Consist of:

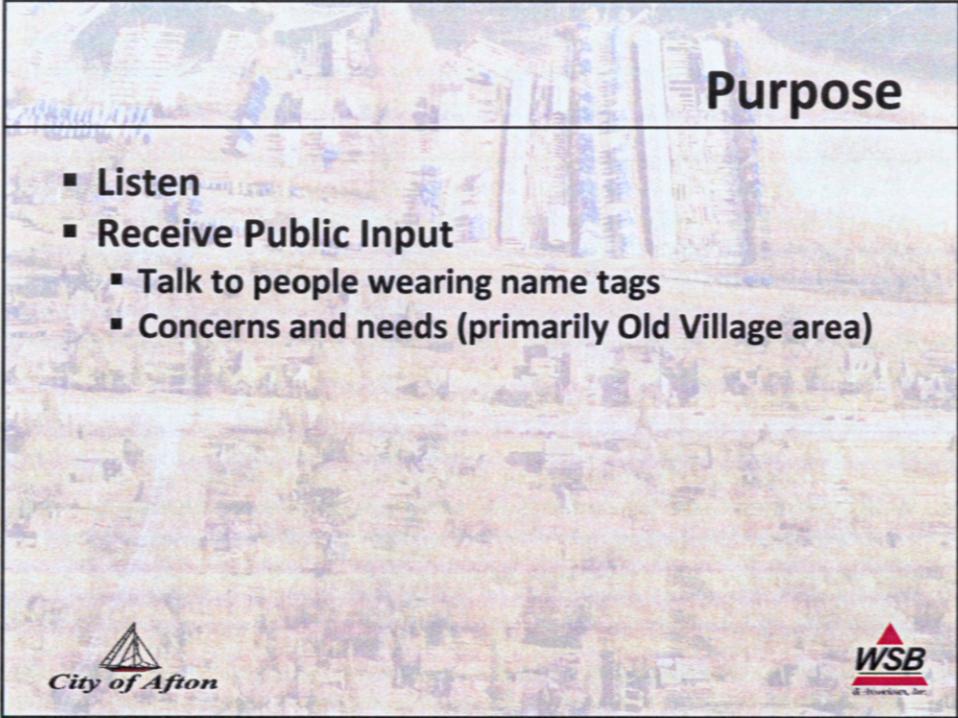
- Two Council Liaisons
- Residents (within/outside the Old Village)
- Business Owners
- Heritage Preservation Commission
- Afton Historical Society
- Washington County



Public Task Force

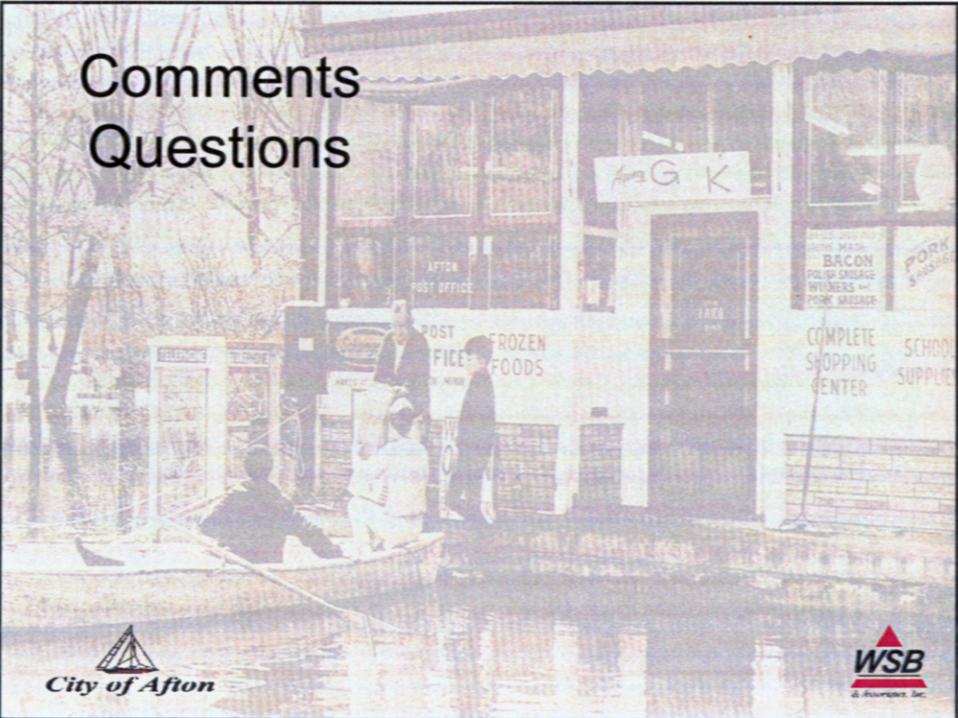
- Commit to Monthly Meetings
 - 5 meetings estimated
 - February thru June 2010
- Sign up Sheet
- Comment Card





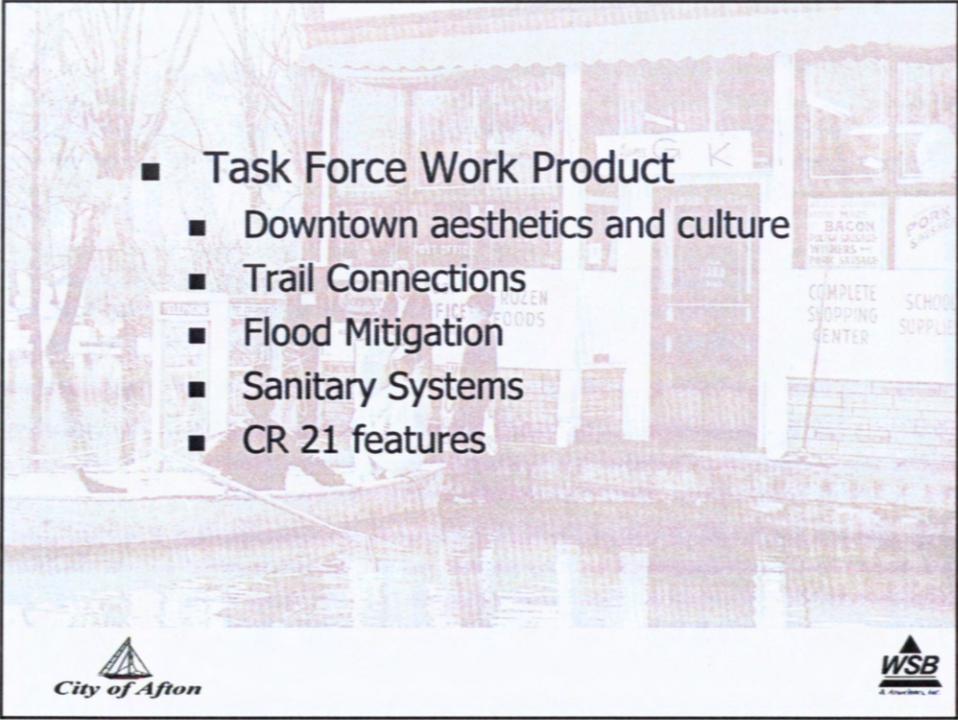
Purpose

- Listen
- Receive Public Input
 - Talk to people wearing name tags
 - Concerns and needs (primarily Old Village area)



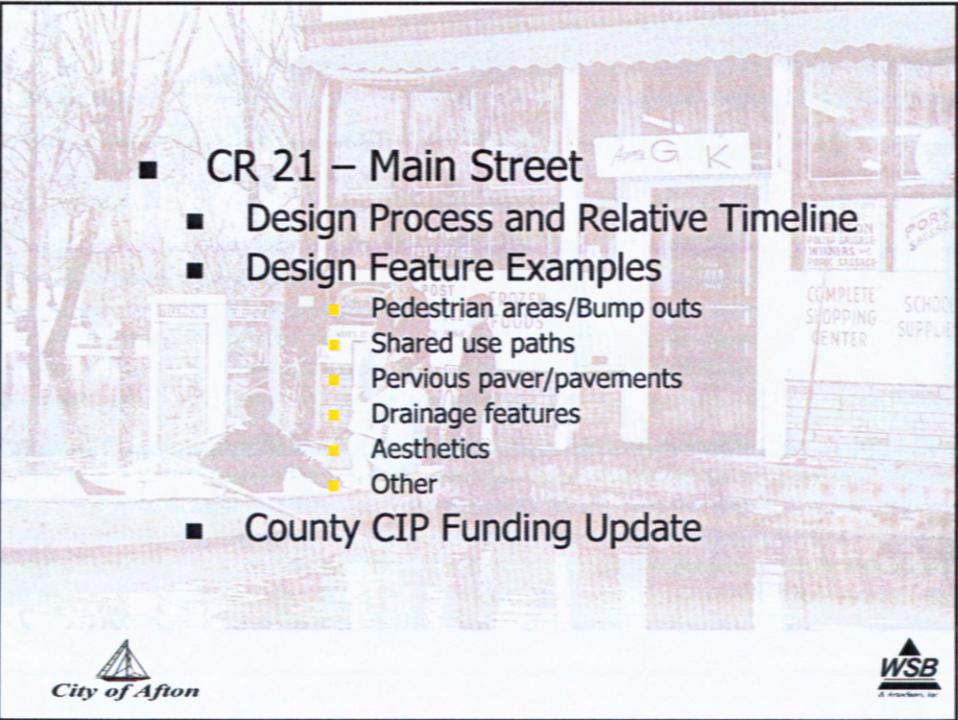
Comments Questions





- **Task Force Work Product**
 - Downtown aesthetics and culture
 - Trail Connections
 - Flood Mitigation
 - Sanitary Systems
 - CR 21 features

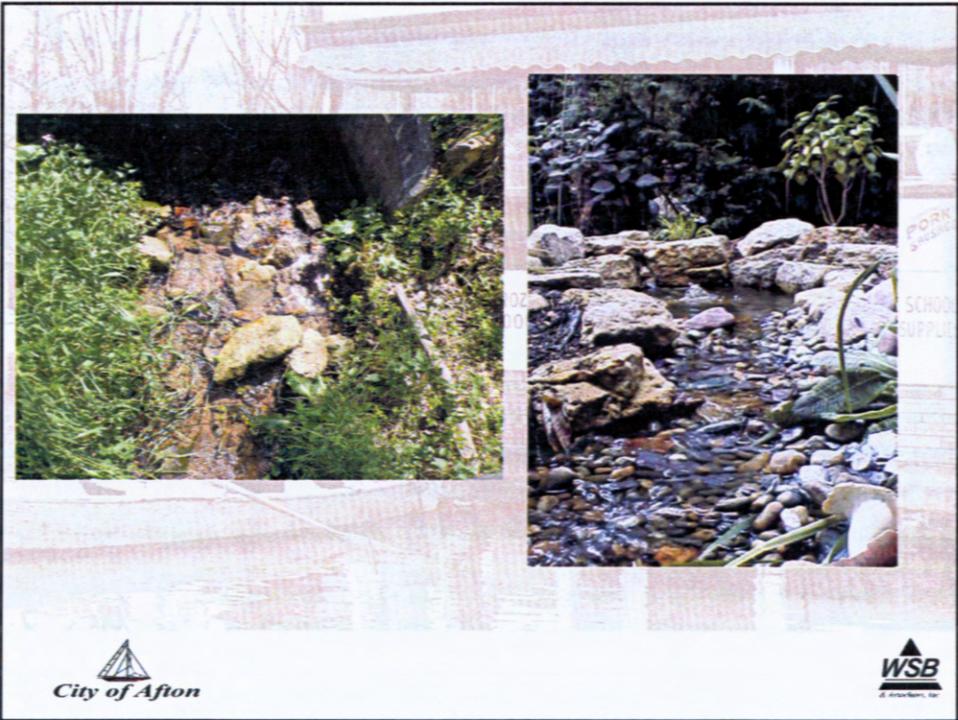
 



- **CR 21 – Main Street**
 - Design Process and Relative Timeline
 - Design Feature Examples
 - Pedestrian areas/Bump outs
 - Shared use paths
 - Pervious paver/pavements
 - Drainage features
 - Aesthetics
 - Other
 - County CIP Funding Update





Old Village Sanitary Sewer - 50 Year Life Cycle	
City of Afton, MN 01856-10	
RESIDENTIAL PROPERTY EXAMPLE	ESTIMATED COST PER UNIT
SANITARY SYSTEM	
SEPTIC AND DRAINFIELD REPLACED ONCE	\$30,000 - \$45,000
POINT SOURCE TREATMENT SYSTEM	
COMPOST TANK	\$11,500.00
RETROFIT, SEALAND TOILETS, PLUMBING	\$8,500.00
GREY WATER TREATMENT SYSTEM	\$7,500.00
COMPOST REMOVAL, PINE BEDDING	\$18,600.00
ESTIMATED MAINTENANCE BY A CERTIFIED OPERATOR	\$2,500.00
TOTAL	\$48,600.00
COLLECTION AND TREATMENT SYSTEM	
COLLECTION SYSTEM	\$6,233.50
LIFT STATION	\$1,241.38
TREATMENT SYSTEM (INCLUDING \$200,000 FOR LAND)	\$7,586.21
30% OVERHEAD	\$119.57
MAINTENANCE	\$1,034.48
TOTAL	\$16,215.13



Old Village Flood Mitigation - 50 Year Life Cycle	
City of Afton, MN 01856-10	
DESCRIPTION	ESTIMATED COST
LEVEE RECONSTRUCTION AND REALIGNMENT	
LEVEE ACCREDITATION	\$2,200,000.00
TOTAL	\$2,200,000.00
FLOOD PROOFING STRUCTURES IN THE FLOODPLAIN	
FLOOD PROOF RESIDENTIAL STRUCTURES IN FLOOD PLAIN (5 @\$100K)	\$500,000.00
FLOOD PROOF COMMERCIAL STRUCTURES IN FLOOD PLAIN (10, \$150K)	\$1,500,000.00
FLOOD RESPONSE/MAINTENANCE/CLEANUP (ASSUME 2 - \$50K)	\$100,000.00
TOTAL	\$3,600,000.00



APPENDIX C

Task Force Attendance Sheets

**Sign-In Sheet
Task Force Meeting
Wednesday, February 17, 2010
7:00 p.m. – 9:00 p.m.**

**Old Village Improvements
City of Afton, Minnesota
WSB Project No. 1856-10**

Name	Mailing Address (including City, State, and Zip Code)	Telephone/Fax/E-mail
Diane Hankee, City Engineer WSB & Associates, Inc.	WSB & Associates, Inc. 701 Xenia Avenue South, Suite 300 Minneapolis, MN 55416	763-287-7179 dhankee@wsbeng.com
Kathy Jarvis	3291 S. ST. CROIX TRAIL Box 326	651-436-8883 Goody- Jarvis @Aftonhousesin.com
David Schmidt	3335 St. Croix Tr. So. Box 212	651-436-3514 aftonroadking@msa.com
Glenn Bowman	7200 Timber Trail Ln S Cottage Grove, MN 55016	651-436-1401 glennbowman@aftonmarina.net
Nathan Shaw	14810 Valley Creek Trail So. Afton	651-998-0696 Nittie @ Yahoo
GARY ANDERSON	623 near Ave S.	651-436-2249 garydanderson@MUDSPRING.COM

Sign-In Sheet
Task Force Meeting
Wednesday, February 17, 2010
7:00 p.m. - 9:00 p.m.

Old Village Improvements
City of Afton, Minnesota
WSB Project No. 1856-10

Name	Mailing Address (including City, State, and Zip Code)	Telephone/Fax/E-mail
BILL BAGLIO	3290 S ST CROIX TR	651 436 1506 BELLISA2005@COMCAST.NET
Bill Palmquist	3466 ST. CROIX TRL S	651-436-2238 Bill.Palmquist@AftonMn.com
JIM BOUGIE	3112 NYBECK AVE SO	651-436-5392 vostriad@aol.com
MARTIN STERN	P.O. Box 297 AFTON	651-436-8080 MARTIN@SQUIREHOUSEGARDENS.COM
Clerk Coton	P.O. Box 6	651-337-0261
Bobbi Coton	P.O. Box 6	651-337-0261

mail@equaris.com

Sign-In Sheet
Task Force Meeting
Wednesday, February 17, 2010
7:00 p.m. – 9:00 p.m.

Old Village Improvements
City of Afton, Minnesota
WSB Project No. 1856-10

Name	Mailing Address (including City, State, and Zip Code)	Telephone/Fax/E-mail
Oliver Weir	3633 St Croix Tr Afton MN 55001	651.430.3213 Sullawaycafe@gmail.com
Jane Pahl	14445-15 th St. So	436-7108 jpahl@presenter.com
CORY SLAGLE	WASHINGTON COUNTY PW 11660 MYERON ROAD NORTH STILLWATER, MN 55082	651-430-4337 CORY.SLAGLE@CO.WASHINGTON.MN.US
Jim Gaspenini	3121 S. St. Croix Trail (Afton Market Square)	436-8656 aftonlaw@comcast.net
Todd Hubmer	WSB	763-287-7182 thubmer@wsbeng.com
Peg Nolz	15339 afton Blvd S.	436-5626 peg.nolz@gmail.com

Sign-In Sheet
Task Force Meeting
Wednesday, February 17, 2010
7:00 p.m. – 9:00 p.m.

Old Village Improvements
City of Afton, Minnesota
WSB Project No. 1856-10

<i>Name</i>	<i>Mailing Address (including City, State, and Zip Code)</i>	<i>Telephone/Fax/E-mail</i>
Valerie Stoehr	PO Box 312 / Afton 55001	651-436-5630 651 436 5630 Valerie.stoehr@siemens.com

**Attendance Sheet
Task Force Meeting
Wednesday, March 17, 2010
7:00 p.m. – 9:00 p.m.**

**Old Village Improvements
City of Afton, Minnesota
WSB Project No. 1856-10**

Name	Present at Meeting	Mailing Address (including City, State, and Zip Code)	Telephone/Fax/E-mail
Diane Hankee City Engineer	✓ <i>es</i>	WSB & Associates, Inc. 701 Xenia Avenue South, Suite 300 Minneapolis, MN 55416	763-287-7179 dhankee@wsbeng.com
Kathy Jarvis	<i>yes</i>	3291 St. Croix Trail South P.O. Box 326 Afton, MN 55001	651-436-8883 gordy@aftonhouseinn.com
David Schmidt	<i>yes</i>	3335 St. Croix Trail South P.O. Box 212 Afton, MN 55001	651-436-3514 aftonroadking@msn.com
Glenn Bowman		7200 Timber Trail Lane South Cottage Grove, MN 55016	651-436-1401 glennbowman@aftonmarina.net
Nathan Shaw	<i>Nathan yes</i>	14810 Valley Creek Trail South Afton, MN 55001	651-998-0696 Nittie8@yahoo.com
Gary Anderson	<i>yes</i>	623 Neal Avenue South Afton, MN 55001	651-436-2249 garydanderson@mindspring.com

**Attendance Sheet
Task Force Meeting
Wednesday, March 17, 2010
7:00 p.m. – 9:00 p.m.**

**Old Village Improvements
City of Afton, Minnesota
WSB Project No. 1856-10**

<i>Name</i>	<i>Present at Meeting</i>	<i>Mailing Address (including City, State, and Zip Code)</i>	<i>Telephone/Fax/E-mail</i>
Bill Baglio	YES	3290 St. Croix Trail South Afton, MN 55001	651-436-1506 Billisa2005@comcast.net
Bill Palmquist	Yes	3466 St. Croix Trail South Afton, MN 55001	651-436-2238 Bill.Palmquist@nanm.com
Jim Bougie		3112 Nybeck Avenue South Afton, MN 55001	651-436-5392 Vastoria2@aol.com
Martin Stern	YES	P.O. Box 297 Afton, MN 55001	651-436-8080 martin@sqirehousegardens.com
Clint Elston	YES	P.O. Box 6 Afton, MN 55001	651-337-0261 mail@equaris.com
Bobbi Elston	YES	P.O. Box 6 Afton, MN 55001	651-337-0261 mail@equaris.com

**Attendance Sheet
Task Force Meeting
Wednesday, March 17, 2010
7:00 p.m. – 9:00 p.m.**

**Old Village Improvements
City of Afton, Minnesota
WSB Project No. 1856-10**

<i>Name</i>	<i>Present at Meeting</i>	<i>Mailing Address (including City, State, and Zip Code)</i>	<i>Telephone/Fax/E-mail</i>
Oliver Weir	yes	3633 St. Croix Trail South Afton, MN 55001	651-436-3213 sailawaycafe@gmail.com
Jane Pahl	yes	14445 15 th Street South Afton, MN 55001	651-436-7108 jpahl@pressenter.com
Cory Slagle		Washington County Public Works 11660 Myeron Road North Stillwater, MN 55082	651-430-4337 Cory.slagle@co.washington.mn.us
Jim Gasperini		3121 St. Croix Trail South (Afton Market Square) Afton, MN 55001	651-436-8656 aftonlaw@comcast.net
Todd Hubmer	yes	WSB & Associates, Inc. 701 Xenia Avenue South, Suite 300 Minneapolis, MN 55416	763-287-7182 thubmer@wsbeng.com
Peg Nolz	yes	15339 Afton Boulevard South Afton, MN 55001	651-436-5626 Peg.nolz@gmail.com

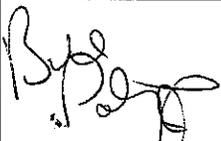
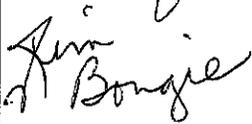
**Attendance Sheet
Task Force Meeting
Wednesday, March 17, 2010
7:00 p.m. – 9:00 p.m.**

**Old Village Improvements
City of Afton, Minnesota
WSB Project No. 1856-10**

Name	Present at Meeting	Mailing Address (including City, State, and Zip Code)	Telephone/Fax/E-mail
Valerie Stoehr	Valerie Stoehr	P.O. Box 312 Afton, MN 55001	651-436-5630 Valerie.Stoehr@siemens.com
Bob Dickie	Bob	Box 26	651-767-2533 RDickie@comcast.net
GORM JARVIS	Yes		
Kenn Kopitzke	Yes	4248 Odell Ave S.	436-1181

*Attendance Sheet
Task Force Meeting
Wednesday, April 21, 2010
7:00 p.m. – 9:00 p.m.*

*Old Village Improvements
City of Afton, Minnesota
WSB Project No. 1856-10*

<i>Name</i>	<i>Present at Meeting</i>	<i>Mailing Address (including City, State, and Zip Code)</i>	<i>Telephone/Fax/E-mail</i>
Bill Palmquist		3466 St. Croix Trail South Afton, MN 55001	651-436-2238 Bill.Palmquist@nanm.com
Jim Bougie		3112 Nybeck Avenue South Afton, MN 55001	651-436-5392 Vastoria2@aol.com
Martin Stern		P.O. Box 297 Afton, MN 55001	651-436-8080 martin@squirehousegardens.com
Clint Elston		P.O. Box 6 Afton, MN 55001	651-337-0261 mail@equaris.com
Bobbi Elston		P.O. Box 6 Afton, MN 55001	651-337-0261 mail@equaris.com
Oliver Weir		3633 St. Croix Trail South Afton, MN 55001	651-436-3213 sailawaycafe@gmail.com

*Attendance Sheet
Task Force Meeting
Wednesday, April 21, 2010
7:00 p.m. – 9:00 p.m.*

*Old Village Improvements
City of Afton, Minnesota
WSB Project No. 1856-10*

<i>Name</i>	<i>Present at Meeting</i>	<i>Mailing Address (including City, State, and Zip Code)</i>	<i>Telephone/Fax/E-mail</i>
Kathy or Gordy Jarvis		3291 St. Croix Trail South P.O. Box 326 Afton, MN 55001	651-436-8883 gordy@aftonhouseinn.com
David Schmidt	<i>David Schmidt</i>	3335 St. Croix Trail South P.O. Box 212 Afton, MN 55001	651-436-3514 aftonroadking@msn.com
Glenn Bowman		7200 Timber Trail Lane South Cottage Grove, MN 55016	651-436-1401 glennbowman@aftonmarina.net
Nathan Shaw	<i>Nathan Shaw</i>	14810 Valley Creek Trail South Afton, MN 55001	651-998-0696 Nittie8@yahoo.com
Gary Anderson	<i>Gary Anderson</i>	623 Neal Avenue South Afton, MN 55001	651-436-2249 garydanderson@mindspring.com
Bill Baglio	<i>Bill Baglio</i>	3290 St. Croix Trail South Afton, MN 55001	651-436-1506 Billisa2005@comcast.net

*Attendance Sheet
Task Force Meeting
Wednesday, April 21, 2010
7:00 p.m. – 9:00 p.m.*

*Old Village Improvements
City of Afton, Minnesota
WSB Project No. 1856-10*

Name	Present at Meeting	Mailing Address (including City, State, and Zip Code)	Telephone/Fax/E-mail
Jane Pahl		14445 15 th Street South Afton, MN 55001	651-436-7108 jpahl@presenter.com
Cory Slagle		Washington County Public Works 11660 Myeron Road North Stillwater, MN 55082	651-430-4337 Cory.slagle@co.washington.mn.us
Jim Gasperini		3121 St. Croix Trail South (Afton Market Square) Afton, MN 55001	651-436-8656 aftonlaw@comcast.net
Todd Hubmer	<i>Todd</i>	WSB & Associates, Inc. 701 Xenia Avenue South, Suite 300 Minneapolis, MN 55416	763-287-7182 tthubmer@wsbeng.com
Peg Nolz	<i>Peg Nolz</i>	15339 Afton Boulevard South Afton, MN 55001	651-436-5626 Peg.nolz@gmail.com
Valerie Stoehr	<i>Valerie Stoehr</i>	P.O. Box 312 Afton, MN 55001	651-436-5630 Valerie.Stoehr@siemens.com

Jan Kopczyk

SIGN-IN SHEET

(Please print legibly)

Afton City Hall
3033 St. Croix Trail
Afton, MN 55001

MEETING OF:

DATE:

Task Force

5/27/2010

Name	Address	Phone
Bill Palmquist	3466 St. Croix Trail S. Afton	436 3252
Jim Bouffie	3112 NYBECK AVENUE S	436 5592
Dave Schmidt	3343 St. Croix Tr. S.	337- 0322
Jay Noly	15339 Afton Blvd S.	436-5226
Valerie Stoehr	15800- 36th St S. (PO Box 312)	436-5680
Not all people signed in		

SIGN-IN SHEET

(Please print legibly)

Afton City Hall
3033 St. Croix Trail
Afton, MN 55001

MEETING OF:

DATE:

Task Force

5/27/10

Name	Address	Phone
Kenn Kopritzko	4248 Odell	436-1181
BILL BAGLIO	3290 S ST CROIX	436 1506
Patrick Walczko washco Emergency mgmt	14849 62nd St, Stillwater	430-7636
CORY SLAGLE WASH. CO.	11660 MYEROW ROAD NORTH STILLWATER, MN 55082	651-430-4337
WAYNE SANDBERG	WAYNE.Sandberg@ co.washington.mn.us	651-430-4339
Diane Henke		612-360-1298.
Todd Hubmer	WSB	763-287-7182
Ron Moorse	city	

*Attendance Sheet
Task Force Meeting
Wednesday, June 23, 2010
7:00 p.m. – 9:00 p.m.*

*Old Village Improvements
City of Afton, Minnesota
WSB Project No. 1856-10*

<i>Name</i>	<i>Present at Meeting</i>	<i>Mailing Address (including City, State, and Zip Code)</i>	<i>Telephone/Fax/E-mail</i>
Diane Hankee City Engineer	✓	WSB & Associates, Inc. 701 Xenia Avenue South, Suite 300 Minneapolis, MN 55416	763-287-7179 dhankee@wsbeng.com
Kathy Gordy Jarvis	✓	3291 St. Croix Trail South P.O. Box 326 Afton, MN 55001	651-436-8883 gordy@aftonhouseinn.com
David Schmidt		3335 St. Croix Trail South P.O. Box 212 Afton, MN 55001	651-436-3514 aftonroadking@msn.com
Glenn Bowman		7200 Timber Trail Lane South Cottage Grove, MN 55016	651-436-1401 glennbowman@aftonmarina.net
Nathan Shaw		14810 Valley Creek Trail South Afton, MN 55001	651-998-0696 Nittie8@yahoo.com
Gary Anderson	✓	623 Neal Avenue South Afton, MN 55001	651-436-2249 garydanderson@mindspring.com

*Attendance Sheet
Task Force Meeting
Wednesday, June 23, 2010
7:00 p.m. – 9:00 p.m.*

*Old Village Improvements
City of Afton, Minnesota
WSB Project No. 1856-10*

<i>Name</i>	<i>Present at Meeting</i>	<i>Mailing Address (including City, State, and Zip Code)</i>	<i>Telephone/Fax/E-mail</i>
Bill Baglio	✓	3290 St. Croix Trail South Afton, MN 55001	651-436-1506 Billisa2005@comcast.net
Bill Palmquist	✓	3466 St. Croix Trail South Afton, MN 55001	651-436-2238 Bill.Palmquist@nanm.com
Jim Bougie	✓	3112 Nybeck Avenue South Afton, MN 55001	651-436-5392 Vastoria2@aol.com
Martin Stern		P.O. Box 297 Afton, MN 55001	651-436-8080 martin@squirehousegardens.com
Clint Elston	✓	P.O. Box 6 Afton, MN 55001	651-337-0261 mail@equaris.com
Bobbi Elston	✓	P.O. Box 6 Afton, MN 55001	651-337-0261 mail@equaris.com

*Attendance Sheet
Task Force Meeting
Wednesday, June 23, 2010
7:00 p.m. – 9:00 p.m.*

*Old Village Improvements
City of Afton, Minnesota
WSB Project No. 1856-10*

<i>Name</i>	<i>Present at Meeting</i>	<i>Mailing Address (including City, State, and Zip Code)</i>	<i>Telephone/Fax/E-mail</i>
Oliver Weir		3633 St. Croix Trail South Afton, MN 55001	651-436-3213 sailawaycafe@gmail.com
Jane Pahl		14445 15 th Street South Afton, MN 55001	651-436-7108 jpahl@presenter.com
Cory Slagle	✓	Washington County Public Works 11660 Myeron Road North Stillwater, MN 55082	651-430-4337 Cory.slagle@co.washington.mn.us
Jim Gasperini	✓	3121 St. Croix Trail South (Afton Market Square) Afton, MN 55001	651-436-8656 aftonlaw@comcast.net
Todd Hubmer	✓	WSB & Associates, Inc. 701 Xenia Avenue South, Suite 300 Minneapolis, MN 55416	763-287-7182 thubmer@wsbeng.com
Peg Nolz	✓	15339 Afton Boulevard South Afton, MN 55001	651-436-5626 Peg.nolz@gmail.com

*Attendance Sheet
Task Force Meeting
Wednesday, June 23, 2010
7:00 p.m. – 9:00 p.m.*

*Old Village Improvements
City of Afton, Minnesota
WSB Project No. 1856-10*

<i>Name</i>	<i>Present at Meeting</i>	<i>Mailing Address (including City, State, and Zip Code)</i>	<i>Telephone/Fax/E-mail</i>
Valerie Stoehr	✓	P.O. Box 312 Afton, MN 55001	651-436-5630 Valerie.Stoehr@siemens.com
Kenn Kopitzke	✓	4248 Odell Avenue South Afton, MN 55001	651-436-1181
CHRIS LELLAIR	✓	14949 62nd ST. N. STILLWATER MN 55082	651-430-6673

APPENDIX D

Task Force Goals and Objectives for County Road 21

City of Afton
Downtown Task Force
Vision for CSAH 21

Summary of Overall Goals and Objectives for CSAH 21 through Downtown as developed by the Task Force over the course of multiple meetings (**note goals in bold are added by county**):

1. Emphasize the natural environment
 - a. Sustainability
 - b. Clean Water / Clean Marina
2. Emphasize connectedness to the St. Croix River
 - a. Improve water runoff quality
3. Pedestrian Friendly
 - a. Wide / Welcoming sidewalks
 - b. Put utilities underground
 - c. Create a destination feel – places of interest
 - d. Offer educational opportunities throughout the downtown area
 - i. History
 - e. Traffic calming street design
 - i. Do not promote high speeds
 - f. Emphasize steamboat park
 - i. Passive uses
 - g. Accessibility for all users
4. Create a Village Atmosphere
 - a. Not just a thoroughfare for cars
5. Consider unique/new stormwater management techniques
 - a. Sustainable
 - b. Pervious pavement
 - c. Runnel
6. Emphasize the historic nature of Afton
 - a. Find elements and focal points
 - b. Connection & Respect for the past
 - c. Accommodate 4th of July Celebration
 - d. Keep the “quaint” image
7. Develop a long term solution
 - a. Think outside the box
8. Promote economic viability
 - a. Keep businesses alive and get them thriving
 - b. Develop partnerships with all downtown users and establishments
9. **Obtain Input from all stakeholders**
 - a. **Use various methods including open houses to develop alternatives**
 - b. **Work towards a consensus solution**
10. **Recognize the needs for CSAH 21**
 - a. **Commuter and Truck Route**
 - b. **Boat Haulers – very long vehicles – need a safe route to the marina**
 - c. **Safety is a priority**
 - d. **Water Management – high priority to manage roadway water effectively**
 - e. **Find a balance that fits – community consensus is necessary**

APPENDIX E

Flood Mitigation Cost Comparison and Fact Sheet

**CITY OF AFTON
DRAFT - FLOOD MITIGATION FACT SHEET
May 27, 2010**

Levee Accreditation on FIRM

1. Properties and City infrastructure protected from flooding.
2. City included in FEMA's flood protection program
3. Flood Insurance is not mandatory however it is encouraged.
4. Funded by the DNR Flood Hazard Mitigation program (50/50 match). The DNR supports Levee Accreditation because it minimizes reoccurrences to a 1% chance.

Flood Proof Structures

1. Continued damage to public and private infrastructure, maintenance and clean up.
2. Flood insurance required.
3. Emergency Management required by the City is increased.
4. VBWD rules and permitting.
5. FEMA Grants maybe available.

DESCRIPTION		ESTIMATED COST
Old Village Flood Mitigation - 50 Year Life Cycle		
City of Afton, MN		
01856-10		
LEVEE RECONSTRUCTION AND REALIGNMENT		
LEVEE ACCREDITATION		\$2,800,000.00
TOTAL		\$2,800,000.00
FLOOD PROOFING STRUCTURES IN THE FLOODPLAIN		
FLOOD PROOF RESIDENTIAL STRUCTURES IN FLOOD PLAIN (5 @\$100K)		\$500,000.00
FLOOD PROOF COMMERCIAL STRUCTURES IN FLOOD PLAIN (9, \$150K)		\$1,350,000.00
FLOOD PROOF AFTON INN		\$1,000,000.00
FLOOD RESPONSE/MAINTENANCE/CLEANUP (ASSUME 4 - \$50K)		\$200,000.00
CITY INFRASTRUCTURE REPAIR (\$750K EVERY 25 YEARS)		\$1,500,000.00
TOTAL		\$4,550,000.00

DOES NOT INCLUDE THE COST OF COUNTY INFRASTRUCTURE REPAIR

APPENDIX F
SSTS Summary

Old Village Sanitary Sewer Treatment System (SSTS) Summary

City of Afton, MN

01856-10

TOTAL UNITS	95
NON-CONFORMING	51
ITPHS (FAILURE)	1
FAILURE TO PROTECT GROUND WATER	35
SET BACK ISSUES	15
CONFORMING	44
OTHER ISSUES	
DISCHARGING WITHIN 500 FT OF AN IMPAIRED WATER	18

APPENDIX G

Sanitary Treatment Cost Comparison and Washington County Recommendation

Old Village Afton Sanitary Sewer Options

I. Traditional Septic and Drain Field

The Old Village is served by traditional septic and drain fields (SSTS). These systems include a septic tank to receive waste from individual homes or businesses prior to discharging it to a drain field. Current laws require that each lot have two established drain field locations to discharge.

A. Considerations

There are a number of considerations to the existing traditional septic and drain field systems within the old village area of Afton. These considerations include:

- 1) The limited lot size of parcels located within the Old Village do not currently allocate enough room for an additional drain field or to replace the drain fields present in their current location.
- 2) Washington County may not permit septic tanks and drain fields in the future in the Old Village area due to insufficient area for drain fields and proximity of septic tanks and drain fields to groundwater.
- 3) Washington County will not permit or allow for the use of holding tanks for residential and commercial parcels.
- 4) Commercial and residential parcels cannot expand or improve their parcels due to the system capacity limitations of the lot sizes to accommodate existing traditional septic and drain fields.
- 5) There are concerns about the use of these systems in close proximity to the St. Croix River. These concerns are effluent from the drain fields may come in contact with the St. Croix during high flood waters or that adequate treatment may not be provided prior to effluent reaching the St. Croix River.
- 6) Currently there are approximately 51 non-conforming traditional systems present within the Old Village area. There may not be adequate room or locations for these parcels to provide for conforming construction of these types of systems.

B. Capital Construction Costs

It does not appear that traditional septic and drain field systems can continue to be utilized within the Old Village and meet the requirements for draining wastewater from commercial and residential parcels. However, a simple cost estimate has been prepared for comparison over a 50-year life cycle that includes both the initial capital construction cost and the replacement of the drain field once over the 50-year life span. Based on this analysis, the cost to construct the septic and drain field system is approximately \$15,000 and will need to be replaced once

over its 50-year life span. This estimate does not incorporate the cost for any land acquisition which may be necessary for parcels to bring their lots into conformance under the current rules for septic and drain field installation. These costs also do not include the commercial parcels in the Old Village area. Each community parcel would need to be evaluated independently.

Total Estimated Capital Cost \$30,000

C. Maintenance Costs

Routine maintenance of the septic system requires pumping of the septic tank every two years. This pumping would cost approximately \$150 every two years.

Estimated Maintenance Cost over 50 years \$3,750

II. Point Source Treatment Systems Description

Point source treatment systems are similar to those represented by Equaris systems. These systems separate grey water from toilet fixture water and direct the toilet fixture water to a composting facility for processing. The composting material is then removed for application in agricultural areas and the existing septic and drain field would be utilized to accommodate grey water and would need to be maintained in similar manner as the existing septic and drain field systems.

A. Considerations

There are a number of considerations to take into account when discussing the point source treatment systems. A number of these considerations are presented below:

- 1) The use of the point source treatment system to compost toilet fixture water does not negate the need for septic and drain field to treat the existing grey water.
- 2) The plumbing internally to each home will need to separate out the toilet fixtures (black water) from grey waters sources.
- 3) Additional space located within the property will be required to accommodate the installation of new composter.
- 4) The composter is anticipated to be located within a concrete vault located outside the home.
- 5) The system requires property owners to maintain the composter, pine bedding or composting media, drain field, septic system.
- 6) There are currently concerns over the regulations associated with the use of these systems in the State of Minnesota. It is unclear if the MPCA, MDH, or others would be required to permit the installation of these systems and would further need to be clarified with the regulatory agencies.
- 7) Exact estimations for the cost to retrofit existing commercial facilities in the old village area have currently not been addressed.
- 8) The City will be required to enter private homes to ensure system installation and operation are compliant with permits and rules

B. Capital Construction Costs

Using data available on the Equaris website and other similar sites, the following components have been included in the construction and maintenance cost estimate:

- 1) The compost tank cost includes the concrete vault, composter, and installation within the residential parcel.

Estimated Cost \$9,000

- 2) Retrofit of existing residential structure, installation of Sealand low flow toilets and separation of plumbing fixtures internal to the home. This cost is highly variable. Variability of costs is due to the number of toilet fixtures present within the home, the location of the plumbing stacks and the difficulty with which the grey water and black water can be separated and accommodated internally to the home. It is anticipated that plumbing, carpentry, tile replacement, and possibly some concrete work may be necessary internal to the home to separate black water and route it to the composting tank on the exterior of the home. Due to the variable costs of the retrofit, a fairly large range of costs is estimated.

Estimated Cost \$4,500 to \$20,000

- 3) The proposed point source treatment system would not eliminate the need for drain field and septic tank systems. Due to the reduced load to the drain field system, it is estimated that only the drain field will need to be updated or replaced over the 50-year life cycle cost of this system.

Estimated Cost \$8,000 to \$12,500

Total Estimated Capital Cost \$21,500 to \$41,500*

C. Maintenance Costs

Maintenance costs are necessary for adding in new composting media such as pine bedding and removal of compost tea and pumping out the septic tank. For this estimate, it is anticipated that the monthly cost for compost media would be \$1, removal of compost tea \$30, septic system pumping \$6, and electrical/mechanical costs \$8 for a total of \$45 per month.

Estimated Maintenance Cost \$45/month or \$27,000 over 50 years*

*Note - The cost estimate currently only looks at individual residential units. Individual commercial properties would have to be evaluated separately for cost estimates.

III. Local Collection and Treatment System

The local collection treatment system will connect the existing sanitary discharge locations at each residence and commercial business to a trunk sanitary collection system. The trunk sanitary collection system conveys sanitary flow to a local treatment site within close proximity of the Old Village. This system includes a lift station to pump the sewage to the treatment location and a location for providing treatment for commercial and residential uses. It is anticipated the system would consist of a primary treatment system, and two drain field locations for a life span of approximately 50 to 100 years. For this discussion, a 50-year life span has been considered.

A. Considerations

There are a number of considerations associated with the local collection and treatment system. These considerations include:

- 1) Residential and commercial users will be disrupted one time for the installation of the collection system to receive sanitary effluent from their property.
- 2) This system is currently permitted by the MPCA and can treat approximately 40,000 gallons per day of sanitary flow.
- 3) These systems, once connected, will not require the homeowner to provide maintenance to facilities located within their parcel.
- 4) Users connected to the system will be required to pay the operational cost in the form of monthly or quarterly billings.
- 5) They system will not require the City to enter private residences for the installation of the sewage treatment system.

B. Capital Construction Costs

The anticipated cost to construct and maintain the local collection and treatment system over a 50-year life cycle has the following components and assumptions:

- 1) Capital costs to construct the collection system delivering sanitary effluent to the collection lift station.
Estimated cost \$910,000 to \$1,150,000
- 2) A lift station will be required to convey the sewage collected to the treatment system. This includes all the necessary collections associated with the electrical and physical construction of the lift station and the force main to the treatment plant.
Estimated cost \$180,000 to \$240,000

- 3) Treatment system cost includes the land cost for 50 years of treatment and the cost to purchase the land of approximately \$400,000 to \$650,000.

Estimated cost \$1,300,000 to \$1,500,000

- 4) The cost of the treatment system is divided by the total number of units served. This includes commercial and residential units and is anticipated to accommodate approximately 145 sanitary units (commercial businesses may require more than one unit). The capital costs associated with collection and treatment is divided by the total number of units served.

Total Estimated Capital Cost \$16,500 to \$20,300

C. Maintenance Costs

The local collection and treatment system will have maintenance costs related to operating and maintaining the lift station at the trunk facility. These costs are estimated to be approximately \$50 per month.

Estimated Maintenance Cost \$50/month or \$30,000 over 50 years



Department of Public Health and Environment

Lowell Johnson
Director

Sue Hedlund
Deputy Director

MEMORANDUM

TO: Bill Baglio, Chair-Afton Task Force
FROM: Chris LeClair, REHS, Sr. Environmental Specialist
RE: Rule and Permit Requirements for sanitary sewer options
DATE: June 18, 2010

Three options for sanitary sewer were discussed at the Afton Task Force meeting on May 27, 2010. Washington County Department of Public Health & Environment (Department) was asked to provide detail on the various rule and permitting requirements for each of the three options. The three options discussed in this staff memo are individual subsurface sewage treatment systems (SSTS), point source treatment systems, or a local collection and treatment system.

Department of Public Health and Environment Recommendation

The Department is in support of a Local Collection and Treatment System for the following reasons:

- The Department supports community sewer systems in areas where limitations to SSTS exist.
- The County’s draft comprehensive plan states that community sewer systems may be installed when all other options fail to correct septic system problems in areas of high-housing density.
- The Local Collection and Treatment System addresses the non-compliant and non-conforming SSTS in downtown Afton and creates a long-term solution.
- The operation and maintenance for a Local Collection and Treatment System would be the least burdensome to the individual homeowners and business owners, once the system is installed and in operation. All of the operation and maintenance required by the State Disposal System (SDS) permit would be taken care of by a Certified Wastewater Operating, rather than each individual homeowner.
- There is limited space available for Type I and Type II individual subsurface sewage treatment systems in downtown Afton.
- The operation and maintenance required for Type III systems, Type IV systems, or the point source treatment system would be difficult for the individual homeowners, because it would be each home or business owner’s responsibility to ensure that the system is being maintained and operated in accordance with the operating permit and that the system is operated by a licensed service provider.

Background

As background, it is important to note that the status of SSTS ordinances in Washington County is currently in flux. Washington County adopted the Development Code, Chapter Four, Subsurface Sewage Treatment System Regulations (Washington County Ordinance #179) on September 8, 2009. This ordinance hereinafter referred to as Chapter Four, meets the minimum standards set forth in Minnesota Rules, Chapter 7080-7083, and was approved as such by the Minnesota Pollution Control

Agency (MPCA) prior to final adoption by the Washington County Board of Commissioners.

The City of Afton has its own ordinance that regulates the design, installation, maintenance and operation of individual sewage treatment systems in the City of Afton. In accordance with Minnesota Rules, Chapter 7082.0050, the City ordinance must be revised no more than 12 months after adoption of the county ordinance to adopt the minimum language set forth by the County. The effective date of the County's SSTS ordinance was September 23, 2009. Therefore, given that this project is a future use plan beyond September 23, 2010, the County is applying the standards in Chapter Four.

Subsurface Sewage Treatment Systems/Individual Sewage Treatment Systems

All of the buildings on the east side of St. Croix Trail and south of 33rd Street have some portion of the available space for a soil treatment area at the 10 year flood elevation of 687.5 feet above sea level. Chapter Four requires that a system's treatment medium must be installed at least one-half foot above the 10-year flood elevation. Of these buildings, those that currently have a soil treatment area in the levee will have very little area for soil treatment. It is likely that they would need to be individual mound systems.

For those properties that are higher in elevation, an in-ground system would likely be acceptable. Chapter Four currently requires that any system installed in sandy soils (coarse medium sand, fine sand, coarse and medium loamy sand) have pressure distribution. Gravity distribution is not allowed in these soil types at this time. The soils in downtown Afton are very sandy. Therefore, any in-ground system would be required to have pressure distribution. Pressure distribution requires a pump-tank and a pump.

In spring of 2010, Wenck Associates conducted a survey related to the existing SSTS systems in downtown Afton. Of the 95 properties in the project area, approximately 36 systems are **non-compliant**: one is an imminent threat to public health and safety (ITPHS) and 35 systems are failing to protect groundwater. There are 15 systems that are **non-conforming** because they do not meet setbacks to lot lines, wells, etc. The remaining 44 systems are compliant. Wenck Associates made determinations as to what types of systems would replace the systems that are non-compliant or non-conforming. Although some could be replaced with a Type I or Type II system, most would need to be replaced with systems that would be classified as a Type III or Type IV system, which would require an operating permit from the Department on each system.

There are some systems that would require the use of only holding tanks. This would require an operating permit from the Department. In addition, since holding tanks are prohibited in Chapter Four for residential use and commercial buildings with a flow of 150 gallons per day or greater, most would require a variance from the City of Afton to be installed.

Any system with an operating permit would require a business licensed by the MCPA as a Service Provider to monitor the system in accordance with the operating permit requirements for the life of the system. The systems must be designed by a business that is currently licensed by the MCPA as a Basic or Advanced Designer and the systems must be installed by a business that is currently licensed by the MCPA as an Installer.

Permits would be required to be obtained from the Department prior to the installation of each

individual sewage treatment system. The cost of a mound permit in 2010 is \$740 and the cost of a pressure bed is \$570. Operating permits currently cost \$315 per year. Costs to install and maintain the systems are not included in this memorandum.

Point Source Treatment System

The Minnesota Pollution Control Agency has recently published an article in the Spring 2010 SSTS Report that states:

Treatment devices that reduce and treat wastewater for full recycle within the dwelling or other establishment are not regulated under Minnesota Rules chapter 7080 or 7081. The Equaris Total Household Water Recycling and Wastewater Treatment System is a locally designed and manufactured example of this technology (www.equaris.com). Other state and local codes that apply (building, electrical and plumbing) must be met; the local or state agencies responsible for these codes will need to be consulted before a full wastewater recycle system can be installed.

The Department concurs with that position. Therefore, neither Chapter Four nor the State Code regulates the components in the Point Source Treatment System. A homeowner can choose to install an Equaris system in their home. However, the installation of the Equaris system does not alleviate the need for an SSTS that meets all of the requirements in Chapter Four.

The SSTS beyond the point source treatment system would be regulated by Chapter Four as a graywater system. Graywater systems are much like a standard “tank and drainfield” type system, with the difference being a size reduction. Chapter Four does allow for a reduction in minimum sizing for a graywater system. The minimum size of the soil treatment area of the SSTS of a graywater system can be reduced by 40%.

Graywater systems are considered Type III Systems in Chapter Four. Type III Systems are allowed in Chapter Four for previously developed sites only when a Type I or Type II system cannot be installed or is not the most suitable treatment. For undeveloped lots, Type III systems are allowed under Chapter Four only when two Type I or Type II soil treatment and dispersal areas have been identified on the lot, in addition to the area utilized by the Type III soil treatment and dispersal area. The lot must be able to accommodate long-term sewage treatment in addition to the area utilized by the Type III System. Long-term sewage treatment is defined in Chapter Four as being a minimum area of 10,000 square feet of suitable soil.

Holding tanks cannot be used solely for a graywater system. Soil treatment is required. Holding tanks are allowed in Chapter Four only when the building is non-residential and the daily flow is 150 gallons per day or less. There are few buildings in downtown Afton that would meet these criteria.

Type III Systems require an operating permit from the Department. The operating permit would only address the SSTS for the Point Source Treatment System. Any components inside of the building would not be covered by the operating permit.

The graywater system must be designed by a business that is currently licensed by the MPCA as a Basic or Advanced Designer and the system must be installed by a business that is currently licensed

by the MPCA as an Installer.

Permits from the Department would NOT be required for the installation of **interior** components of the point source treatment system. However, permits would be required to be obtained from the Department prior to the installation of each graywater SSTS. The cost of a mound permit in 2010 is \$740 and the cost of an in-ground system (drainfield or pressure bed) is \$570. Operating permits currently cost \$315 per year.

Local Collection and Treatment System or Large Individual Sewage Treatment System (LISTS)

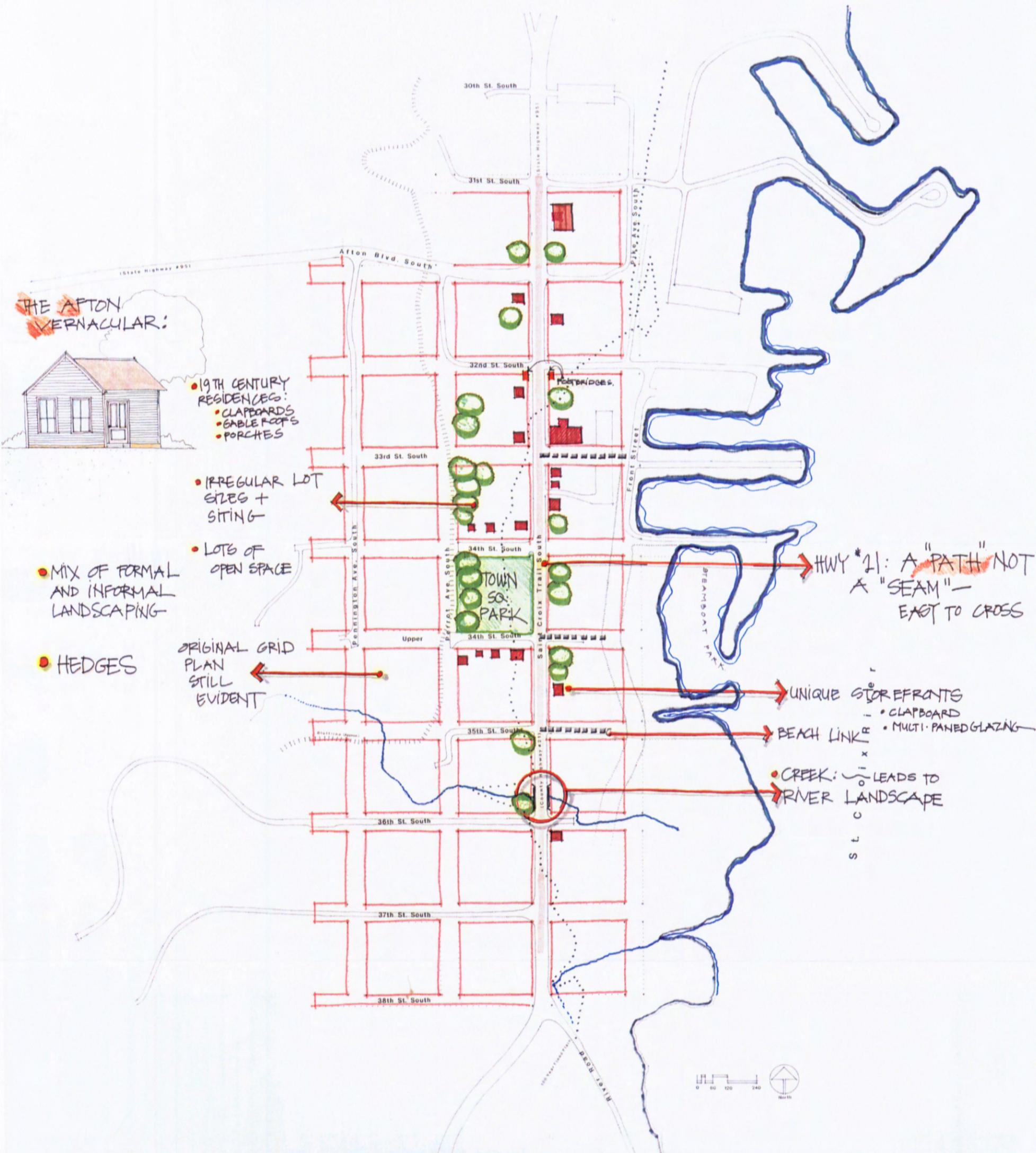
Given the difficulty with finding suitable areas for Type I or Type II soil treatment areas in much of the project area, a collection system is a viable option to provide long-term sanitary services to the downtown Afton area. Washington County is the regulatory authority in Afton for any subsurface sewage treatment system with a wastewater flow between 0-10,000 gallons per day. Estimates for a collector system in downtown Afton are above that threshold. Therefore, the MPCA will be the permitting authority for the collector system.

A State Disposal System (SDS) Permit would be required from the MPCA. The design phase of the collector system is similar to that of an SSTS, with the exception as to who can perform the work and the addition of a hydrogeologic study to ascertain potential effects the system may have on the groundwater and determine the potential for groundwater mounding. The design phase of the collector system must be conducted by a Minnesota Board of Architecture, Engineering, Land Surveying, Landscape Architecture, Geoscience, and Interior Design professionals: a Board licensed Professional Engineer for the system design, a Board licensed Geoscientist for the hydrogeologic study, and a Board licensed Soil Scientist for the soil evaluation.

Once the system is installed and permitted to operate, the City will have to contract with an MPCA Certified Wastewater Operator, most likely a Class D Wastewater Operator, to operate the system in accordance with the SDS Permit and the Operations and Maintenance Manual. Included in this memo is a fact sheet from the MPCA titled *Water-quality Permit Requirements for Wastewater Discharges to Ground Surface and Subsurface*.

In closing, the Department is in support of a Local Collection and Treatment System. If there are any questions or comments, please contact me at 651-430-6673 or at Chris.LeClair@co.washington.mn.us

APPENDIX H
1991 Governor's Study



THE APTON VERNACULAR:



- 19TH CENTURY RESIDENCES:
 - CLAPBOARDS
 - GABLE ROOFS
 - PORCHES

- IRREGULAR LOT SIZES + SITING

- LOTS OF OPEN SPACE

- MIX OF FORMAL AND INFORMAL LANDSCAPING

- HEDGES

ORIGINAL GRID PLAN STILL EVIDENT

HWY #21: A "PATH" NOT A "SEAM" - EASY TO CROSS

UNIQUE STOREFRONTS

- CLAPBOARD
- MULTI-PANED GLAZING

BEACH LINK

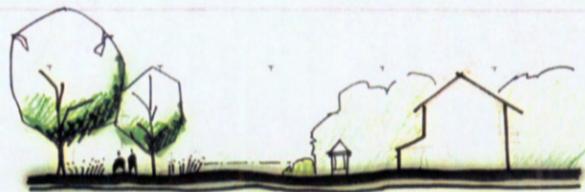
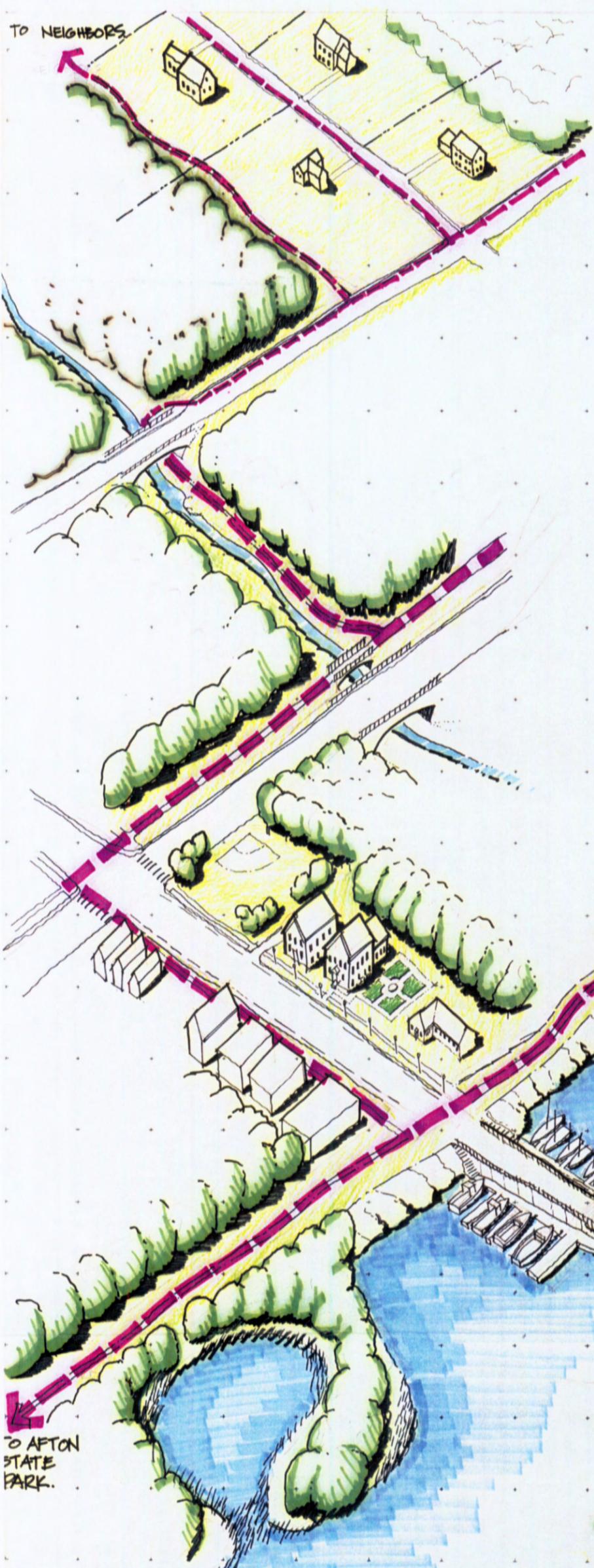
CREEK: LEADS TO RIVER LANDSCAPE

CHARACTER ASSESSMENT.

MINNESOTA DESIGN TEAM

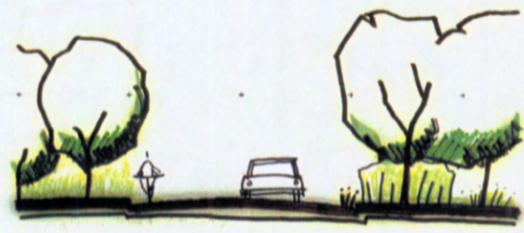
June 3-5, 1994

AFTON, MINNESOTA



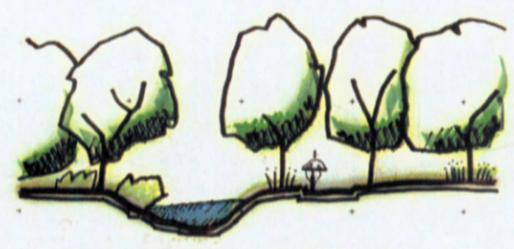
SHARED, PRIVATE LINKS TO PUBLIC TRAILS

YARD PATHS



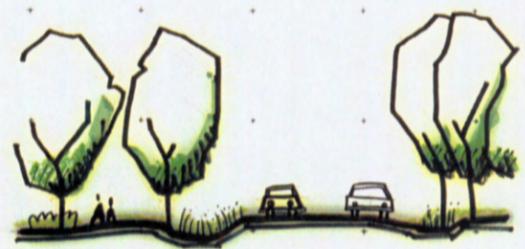
ON-STREET TRAILS IN LOW TRAFFIC AREAS

NEIGHBORHOOD STREETS



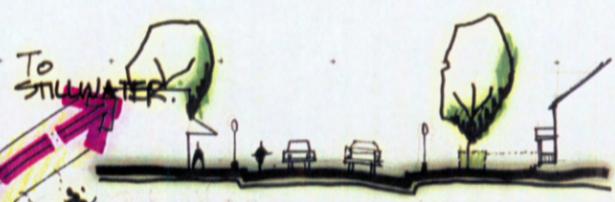
TRAILS FOLLOWING NATURAL CORRIDORS

ALONG NATURAL SYSTEMS



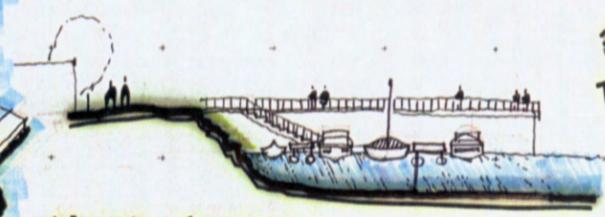
SAFE TRAILS IN HIGH TRAFFIC AREAS

SEPARATED FROM ROAD



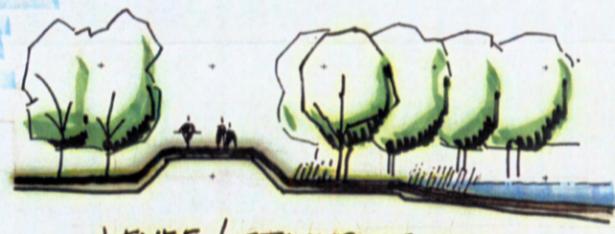
PEDESTRIANS ON SIDEWALK
MARKED BIKE PATHS ON STREET

VILLAGE STREET



PEDESTRIAN ACCESS TO RIVER

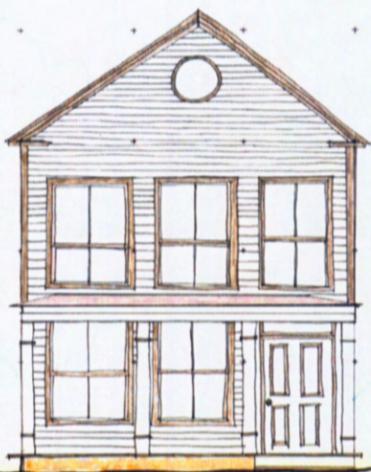
MARINA GATEWAY



ACCESS TO STEAMBOAT PARK

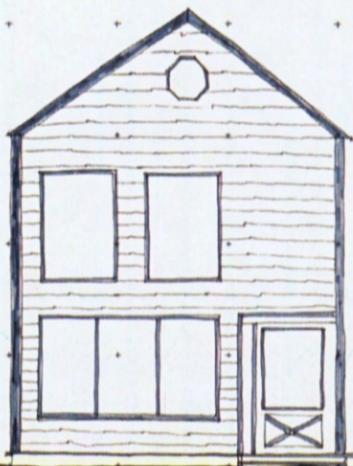
LEVEE / STEAMBOAT PARK

TYPES OF PATHS



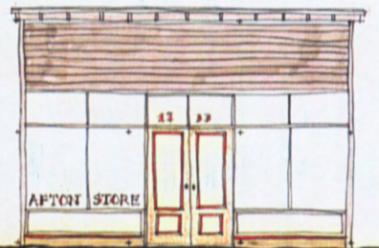
HISTORIC CHARACTER INTACT

- CLAPBOARDS
- WINDOWS
- PORCH
- TRIM



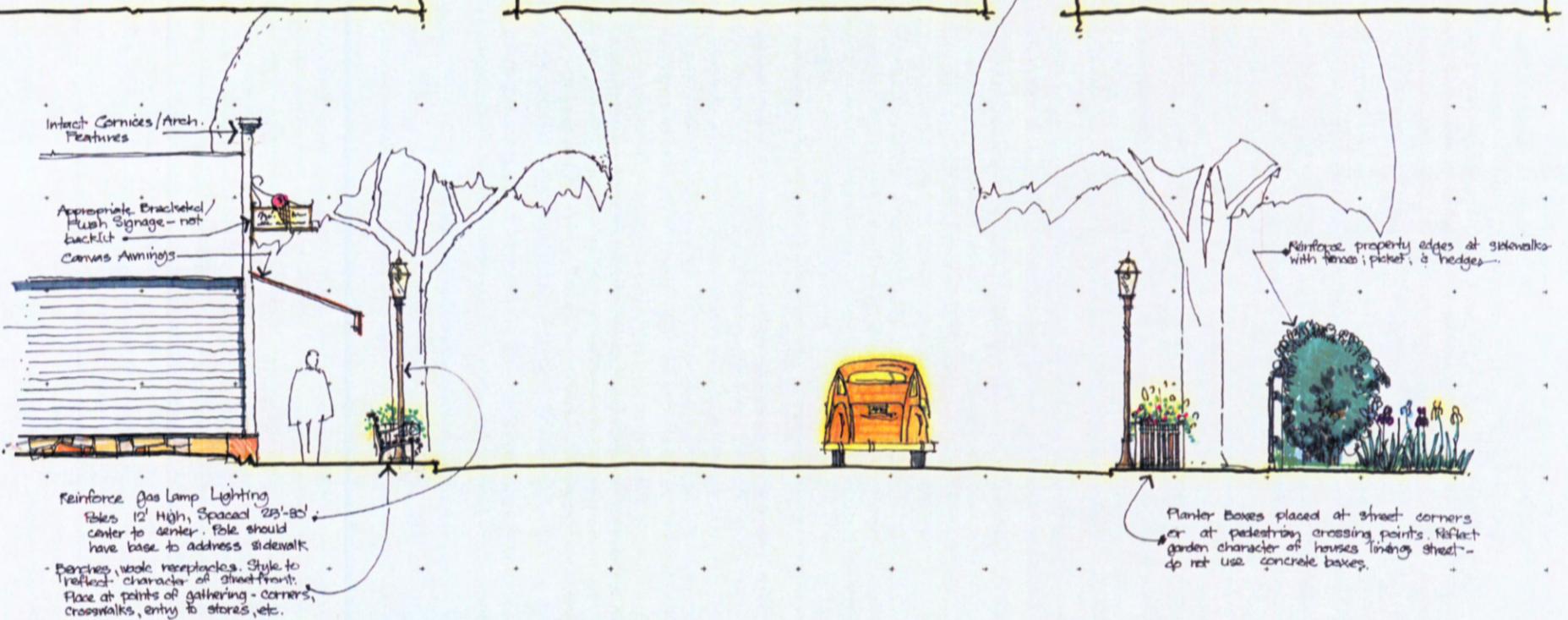
HISTORIC CHARACTER ALTERED

- SIDING CHANGES
- WINDOW REPLACEMENT
- PORCH REMOVAL
- ENTRY ALTERATION



THE APTON VERNACULAR STOREFRONT

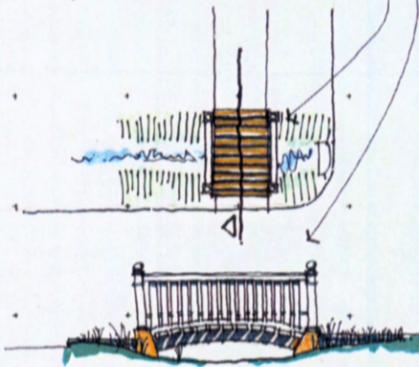
- FLAT ROOF WITH CORNICE
- LARGE GLAZED PANELS
- RAISED PANEL DOORS
- CLAPBOARD SIDING



Reinforce Gas Lamp Lighting
 Poles 12' High, Spaced 23'-80'
 center to center. Pole should
 have base to address sidewalk

Benches, waste receptacles. Style to
 reflect character of street front.
 Place at points of gathering - corners,
 crosswalks, entry to stores, etc.

Reinforce connection of Village with its
 natural environment. Create footbridges
 at sidewalk culverts where drainage
 streams run. Incorporate fence-like
 railings, bowed walk board beds.



FLOW GENTLY, SWEET AFTON

RIVERFRONT PRINCIPLES

HUMAN ECOLOGY - RELATIONSHIPS

- CLEAR DESIRE TO RE-CONNECT w/ RIVER
- Do WHAT IT TAKES (TO COMMUNICATE w/ EACH OTHER)
 1. MAKE IT HAPPEN
 2. SUSTAIN IT

PRESERVATION

- PRESERVE & RECLAIM RIVER EDGE
MAINTAIN HABITAT & GENTLE INTERFACE w/ RIVER
- PRESERVE & SUPPORT VILLAGE
CULTURAL EVENTS / RECREATION DESTINATION
- PRESERVE AFTON CHARACTER
SIMPLE QUIET FOR COMMUNITY

PRESERVE & ENHANCE COMMUNITY SPIRIT



FLOW GENTLY, SWEET AFTON

BURNS POINT

- ▣ PASSIVE USE
- ▣ SWIMMING
- ▣ COMMUNITY EVENTS
- ▣ PICNICING
- ▣ FAMILY EVENTS
- ▣ MUSIC PERGOLA
- ▣ PEDESTRIAN EMPHASIS CONNECT

VILLAGE PIER

- ▣ PEDESTRIAN
- ▣ TREE CANOPY
- ▣ LIMITED PARKING
- ▣ VILLAGE/RIVER GATEWAY
- ▣ OBSERVATION TERMINUS
- ▣ LIMITED PARKING
- ▣ DISPLACED BOAT STORAGE
- ▣ DRIVABLE
- ▣ PERGOLA w/ NATIVE PLANTINGS.

STEAMBOAT PARK

- ▣ NATURAL/HABITAT
- ▣ QUIET
- ▣ WALKING
- ▣ FISHING
- ▣ SWIMMING
- ▣ SKATING
- ▣ BOARD WALK
- ▣ EXPAND ENTRANCE TO NEXT LOT
- ▣ IMPROVED ACCESS



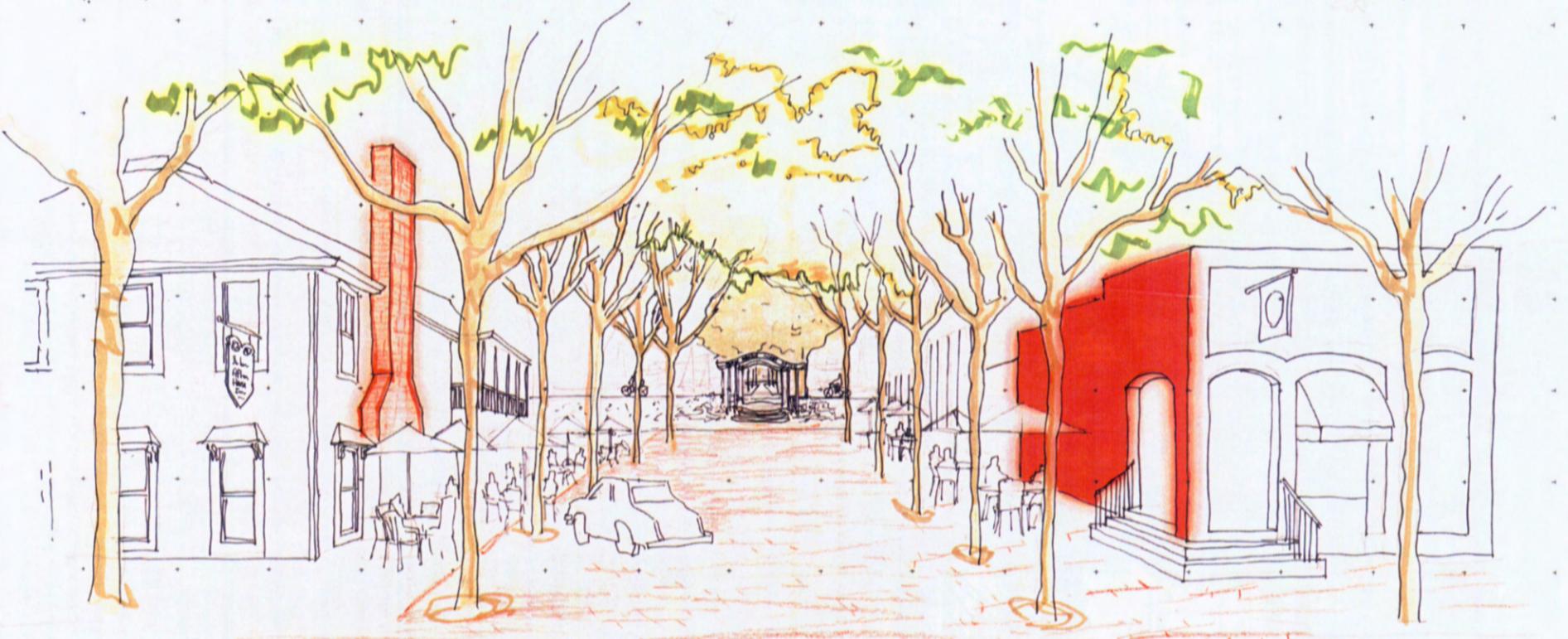
RIVERFRONT PARKS

MINNESOTA DESIGN TEAM

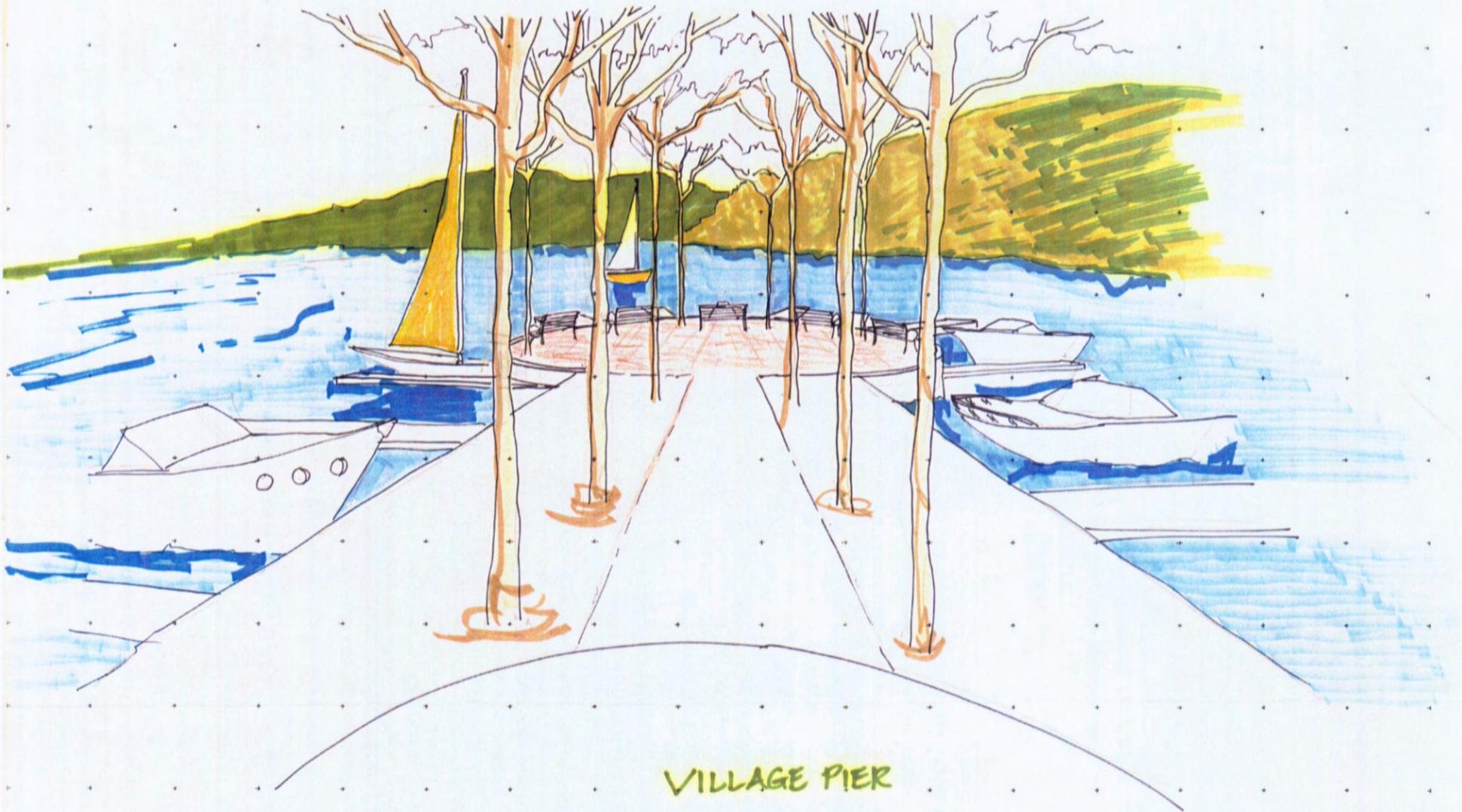
June 3-5, 1994

AFTON, MINNESOTA 2

FLOW GENTLY, SWEET APTON



33 STREET SOUTH



VILLAGE PIER

 **VILLAGE PIER,**

MINNESOTA DESIGN TEAM

June 3-5, 1994

AFTON, MINNESOTA 5

APPENDIX I

Community Photos and Comments

Afton Old Village Task Force:

3/7/10 from member Gary D. Anderson, 623 Neal Ave. S

What we still have today and need to retain:

An historic village dominated only by location on a major river and its unique surrounding geography.

The St. Croix River is still largely unspoiled and is one of the village's most important tourism features.

The scenic value of a timeless village nestled against the river and surrounded by hills on all sides, giving it a mountain valley like feeling.

The village has many characteristics similar to those found in New England villages and retains much of the natural wooded character it had when first settled.

The village park supports a look and feel of an American landscape that has vanished nearly everywhere else.

Vision:

Establish a long term plan where Afton is seen as the benchmark environmental leader in Minnesota and retain the current look and scenic feel of an historic village surrounded by hills and next to the St Croix River.

Key Success Factors:

1. The vision is supported in the city of Afton and most importantly in the historic old village.
2. Create an historic village district with the will to retain and enhance what we have.
3. Solve the environmental issues of the historic village such as clean water, waste and river flood management.
4. If the vision and key success factors are accomplished, economic development will take care of itself.







MAY

65













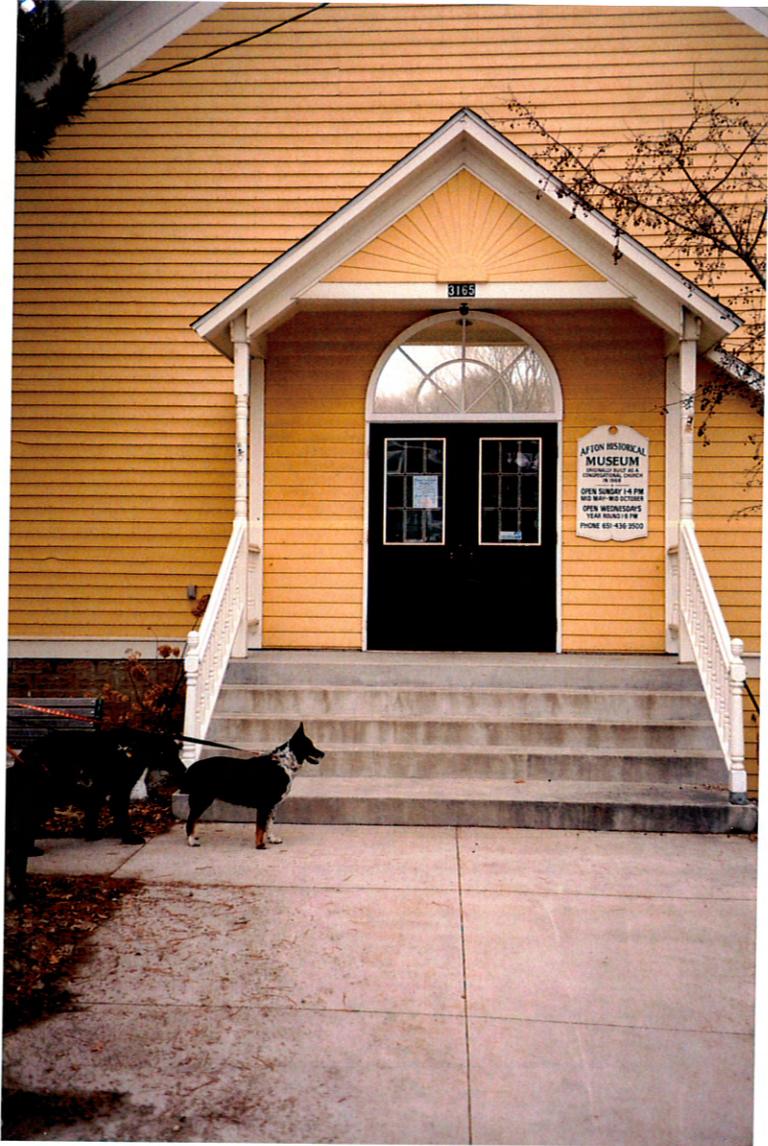
Photos showing Positive Elements













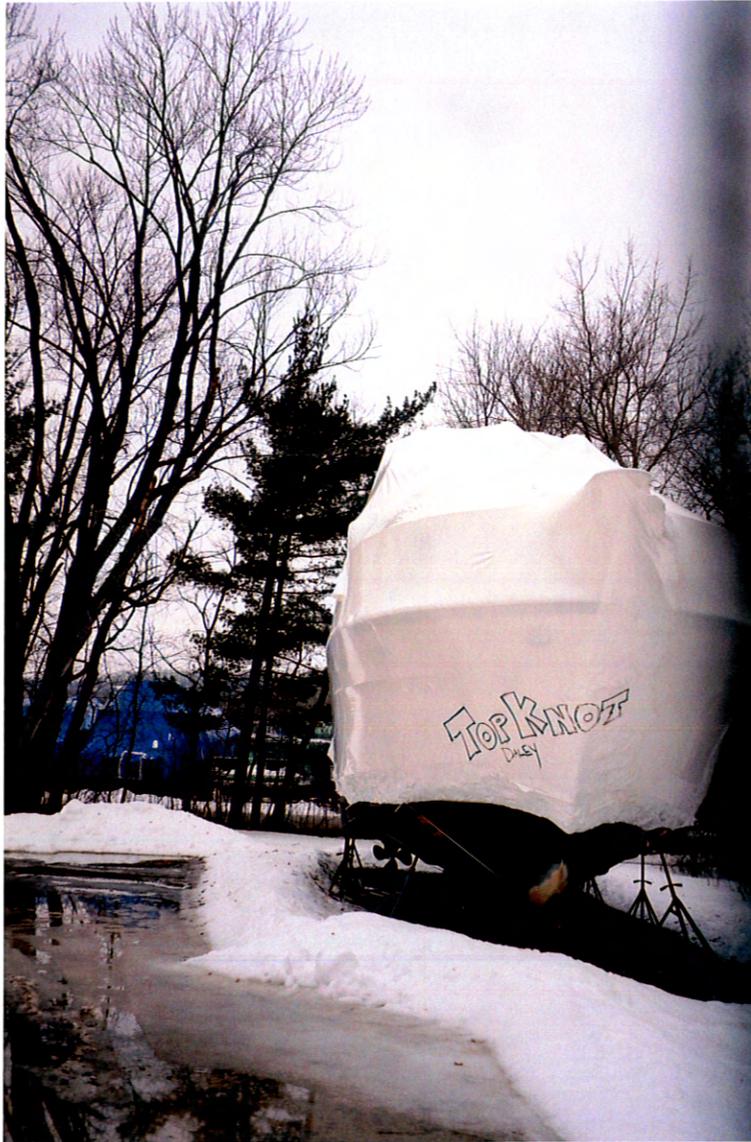




Photos showing Negative Elements







APPENDIX J

Washington County Trail Map



Local trails (esp. between 45th and 50th Street) are not considered under the St. Croix Valley Regional Trail Master Plan, although interconnections are encouraged as determined appropriate by the City of Afton

Local trails in Denmark Township are not considered under the St. Croix Valley Regional Trail Master Plan, although interconnections are encouraged as determined appropriate by Denmark Township



0' 500' 1000' 2000'

- PROPOSED BIKEWAY (Wide Shoulder on Road)
- PROPOSED REGIONAL TRAIL – OPTIMAL ROUTE
- ALTERNATE REGIONAL TRAIL ROUTES
- ALTERNATE REGIONAL TRAIL ROUTE (ONLY IF NONE OF THE ROUTES THROUGH AFTON STATE PARK ARE ADOPTED)
- POTENTIAL CONSERVATION EASEMENT / PRESERVED GREENWAY CORRIDOR (CONCEPTUAL BOUNDARY)
 - Overlays Steep Slopes, Ravines, and Natural Areas
 - Established Through Cooperative Agreement With Private Landowners
- 1 KEY NUMBER AND AREA DESIGNATION FOR DETAIL MAPS

MASTER PLAN – ST. CROIX VALLEY REGIONAL TRAIL



Prepared by:
BRAUER
 10417 Excelsior Blvd.
 Suite One
 Hopkins, MN 55343
 Project #04-15
 Date: December, 2004