STAFF REPORT

STONE BROOKE SUBDIVISION EROSION CONCERNS

JANUARY 22, 2013

The Storm Sewer Outlet Erosion Control annual program provides for stabilization of areas that have become eroded due to discharges of the storm sewer system into streams, channels, swales, gullies, or drainage ways in residential areas. The intent of this annual CIP program is to provide a more permanent control of the erosion and will reduce recurring maintenance costs in these areas.

The location identified for this program in 2011/12 was the creek adjacent to the Stone Brooke Subdivision. **The area of study was the creek crossing at Hoover Avenue to the outlet at Ada Hayden Park** (see attached map). Subsequently, the engineering analysis took place through this program. In August 2012 Public Works staff and Nate Easter of Bolton & Menk met with Ted Tedesco, resident at 4002 Stone Brooke Road, on-site to determine the issues affecting the area. Mr. Tedesco's neighbor, Paul Mumm, resident at 1506 Stone Brooke Road, was also present. Both gentlemen were concerned about settlement near a storm sewer pipe that carries storm water from an intake on Stone Brooke Road, between the Tedesco and Mumm properties, and discharges into the creek. The concern with the settlement is that it appears to be creeping towards the homes. During the meeting, both neighbors also described the way in which water flows through the area during heavy rain events, such as encountered during the summer of 2010.

More recently, on November 11, 2012, City Council referred to staff a request to investigate the issues related to storm water in Stone Brooke Subdivision as outlined in an email from Monte Parrish, Association President.

STAFF COMMENTS:

The main area of concern for these property owners is an area of settlement between their respective properties. Between these properties is an existing storm sewer pipe that outlets into the creek. The land settlement is occurring above/near the storm sewer pipe installation. There are several possibilities as to why the land could be settling. The primary reasons could include surface erosion, side slope sloughing along the channel, channel undercutting, utility pipe collapse, and poor compaction of utility trenches. It is the City's responsibility to maintain the creek, since it carries public stormwater discharge; as well as to maintain the storm sewer pipe.

City staff televised the section of storm sewer to determine if there were any irregularities in the storm sewer and **found no evidence of collapse, cracks, holes, or soil infiltration into the storm sewer.** The drainage channel through this entire study was analyzed, showing little evidence of significant erosion. **The only point of issue**

was the small location between the two homes, noted above. There is sufficient channel armoring (rip-rap) along the sides and bottom of the channel in this area, since the City previously had a contractor install the channel protection. There was evidence of sediment in the rip-rap in some areas, which has come from upstream sources. No major bank erosion in this area was found that would lead to the settlement issue (undercutting or surface). In fact, it was found that this stretch of drainage channel is one of the more stable drainage channels across the City.

During the discussion, the neighbors also described how water overtops the creek bank and how the water moves through the area during high water events (see attached map). The flooding they described in the areas near Stone Brooke Subdivision is not damaging to any permanent structures in the area. This out of bank flow allows for storm water in excess of the channel capacity to overtop and recede slowly, limiting erosion in the area. In fact, this area could serve as a model to illustrate how an urban channel can function well with surrounding uses.

After meeting with these neighbors, staff and the City's consulting engineer walked the channel upstream from the outlet point at Ada Hayden to the culvert crossing at Hoover Avenue. While walking the channel, it was noted that the condition of the creek bed, banks and vegetation are similar to the desired end result improvements recently constructed at College Creek in west Ames. The banks are firm and stable with good vegetation, and the creek bed had medium sized rocks to manage flow in normal conditions. The overland flows that occur are also consistent with how a creek should work in reasonably heavy rain events to meander out of its banks and work its way back into its banks downstream. It was also noted that the below grade addition on the back of 4006 Stone Brooke Road did not have flooding in the rain events of 2010 (see attached map for location).

During review of the area, it was determined that there is no existing storm water easement along the drainage channel. There is an existing utility easement, but this easement is not intended for access for storm water improvements or maintenance. If improvements or maintenance is required, the City does not currently have access rights for these activities. Any work that is to be done now or in the future will require an easement to perform that work. In moving forward, staff will approach the homeowners' association about obtaining a permanent storm water easement.

SUMMARY:

1) The likely reason for the settlement is due to poor compaction above/near the storm sewer trench when the pipe was installed. Therefore, the settlement will be monitored with an electronic survey to ensure that the area is no longer settling. An initial survey will be taken with repeated surveys monthly between spring 2013 and fall 2013. If settlement is shown to have ceased, the area will be stripped of the existing grass, soil will be added, and the area will be re-sodded. If the settlement is not yet complete, however, the area will be excavated, fill material added and compacted, and the area will then be re-sodded.

2) With regards to the creek and the out-of-bank flows, no further action is recommended in this area of the Stone Brooke Subdivision.

These improvements will utilize funding already identified for this location in the 2011/12 Storm Sewer Outlet Erosion Control program. Although \$100,000 was initially identified for this program, it is estimated that the work noted above should cost in the range of \$10,000 to \$15,000. That should address the needs identified by these neighbors; and will allow the remainder of this appropriation to be reallocated to highly prioritized storm water drainage improvements in other parts of the city. This action could be done with a temporary construction easement from the adjacent property owners for access to the area while the neighborhood association is being approached about a permanent easement.



Geographic Information System (GIS) Product Disclaimer: City of Ames GIS map data does not replace or modify land surveys, deeds, and/or other legal instruments defining land ownership and land use nor does it replace field surveys of utilities or other features contained in the data. All features represente in this product should be field verified. This Product is provided "as is" without warranty or any representation of accuracy, timeliness or completeness. The burden for determining accuracy, completeness, timeliness, merchantability and fitness for or the appropriateness for use rests solely on the User.



Settlement Area Between 4002/1506 Stone Brooke Road Area Map





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Settlement Area Between 4002/1506 Stone Brooke Road



E-Mail from Monte Parish RE Stone Brooke Storm Water Issue Fwd; Stone Brooke Storm Water Creek. Jami Larson to: DVoss 11/21/2012 09:24 PM CC: Bobanncamp, tom, jlarson101, jeremyndavis, pfo, matthew, victoria28, sawyerkbaker, SSchainker Show Details Diane-This is the email that was sent by Monte. I am copying all Council Members, because it appears that only Steve, Ann, Péter, Matthew and I originally received it. Jami ----Original Message-----From: Iowa House <iowahouse@mchsi.com> To: SSchainker <SSchainker@city.ames.ia.us>; jjoiner <jjoiner@city.ames.ia.us>; bobanncamp <bobanncamp@aol.com>; jlarson101
<jlarson101@aol.com>; pfo <pfo@iastate.edu>; matthew
<matthew@fightingburrito.com> Cc: banderames <banderames@aol.com>; lee.griffin <lee.griffin@bmo.com>; drust <drust@mchsi.com>; jrring <jrring@mchsi.com>; ehart <ehart@iastate.edu>; Art Pohm <avpohm@aol.com>; swansonrp <swansonrp@msn.com>; etiowa <etiowa@gmail.com>; dfcarter <dfcarter@mchsi.com>Sent: Sun, Oct 28, 2012 1:32 pm Subject: Re: Stone Brooke Storm Water Creek. Hello Steve, The erosion issue that affect Ted and Joanie Tedesco's home is also affecting several other residences in Stone Brooke. Per some of my earlier discussions with Stone Brooke developer Bill Allen, much of this storm water comes as far away as the North Grand Mall. We believe it essential that we make some substantive progress on this storm water issue and stand ready to assist in any way we can. Thanks! Monte Parrish President, Stone Brooke Homeowners Association 1511 Stone Brooke Rd. Ames, Iowa 50010 515-292-2474 (work) 515-232-2432 (h) 515-292-9218(f) On Oct 28, 2012, at 10:17 AM, MonteParrish@aol.com wrote: From: TedJoanie@aol.com To: MonteParrish@aol.com, BAnderAmes@aol.com CC: jjoiner@city.ames.ia.us, SSchainker@city.ames.ia.us Sent: 10/22/2012 2:44:04 P.M. Central Daylight Time Subj: Stone Brooke Storm Water Creek. Monte & Bob, As you are aware I have had several conversations with the Public works Page 1

E-Mail from Monte Parish RE Stone Brooke Storm Water Issue Dept. of the City of Ames, as my property at 4002 Stone Brooke Road, has erosion issues from the additional flows in the storm water creek.

I go back about a number of years ago when the city hired Armstrong Company of Ames to come in and rip-rap the creek to stabilize the creek banks. This was done with the thought that the city had a storm water management agreement with the Stone Brooke Homeowners Association.

Earlier this summer, the city did hire a consultant to look at the creek and the problems that exist with capacity etc. since additional development has occurred on the east side of the creek. A representative of the city and the consultant did come out and I did visit with them. They did advise at that time the was no agreement on record and that they would pursue getting one in place. Nothing has happened up to this point. I did visit with the city manager and he advised it would be proper for the president of the association to write the Mayor and City Council and request that this item be placed on the agenda of a future meeting to discuss where we stand and what action can be taken.

I would ask that this communication occur as soon as possible. Thank You,

Ted Tedesco Ames, Iowa 515-290-4189