

## MEMORANDUM

**To:** Public Services Chairman Paul Flood and Committee Members 6.6 2/21/17  
**c:** Village President and Board *FSB*  
**From:** Kevin Barr, Village Manager  
**Date:** February 15, 2017  
**Subject:** Drainage Project Grant Project Review

**Issue:** The Village has received proposals for potential grant applications in the Norfolk/Iroquois area and the Chestnut Avenue alley. We would like to review these proposals with the Committee so that a recommendation can be made to the full Board as to how to proceed.

**Analysis:** Several weeks ago we advised the Board that we were entering into an agreement with the Conservation Design Forum (CDF) to prepare preliminary storm drainage plans suitable for grant application. The intent was to provide designs for the two areas and see if they are worth carrying forward. The information we received along with schematics of the two areas are attached.

### Norfolk Area:

The concept that CDF developed for this area includes work on four (4) intersections (Norfolk and Hiawatha/Iroquois/Mohawk and Indian). In order to have a meaningful impact they determined the need for bio retention areas (in parkway), permeable pavers in the area around the existing "islands" and altering the islands themselves to add a bio retention factor. The bottom line intent is to allow for storm water retention and drainage in an environmentally sound way. The latter is what makes the project viable for grant application to the IEPA and DuPage County. The total estimated cost for all four (4) intersections is \$1,620,000 of which we would hope for a maximum of 75% paid through grants, leaving about \$400,000 in local share. The actual storm drainage benefit is yet to be calculated.

### Chestnut Avenue Alley:

This proposal calls for permeable paving of the alley and the adjacent commuter parking area. It also includes a bio retention swale area adjacent to the alley. The total estimated cost is \$421,000. The local share, assuming the same 75% grant obtained via grant, would be about \$106,000.

### Proposed Direction:

The costs involved, particularly for the Norfolk area, are substantial. Because of this we decided not to try and push this forward for the January deadline to apply for the DuPage County grant. The deadline for the IEPA grant is in July. We decided the decision is complex enough we should take the time and aim for that date if we move forward.

Staff believes we should move forward and apply for the Chestnut Alley grant. This is in part because the cost of the project is more affordable. The estimated local cost, assuming we receive the full grant, is about \$106,000. We estimate that basic resurfacing of the alley and parking lot would cost about \$80,000. Though this is not currently included in our budget or 10-year capital plan, it will probably need resurfacing in the next

few years. Given that the differential between routine resurfacing and the permeable paver option is about \$26,000, this appears to be a viable means of addressing flooding in the area and leveraging grant funds.

In regards to the Norfolk intersections staff does NOT recommend moving forward with the full package. The total estimated cost is \$1,620,000, of which the Village share would be more than \$400,000 even if we received the full grant (75%). Unlike the Chestnut Alley, none of this work is a replacement for something we would otherwise be doing. Therefore, it can only be judged in terms of its potential impact on storm water management. We could consider applying for one intersection as a kind of test case. The Village cost would then be closer to \$100,000. I would like to discuss this further with the Committee.

**Action Requested:** Discussion at the Committee level with the goal of making a recommendation to the Village Board on how to proceed, or not proceed, with this project. Staff believes we should at least move forward with an application for the Chestnut Alley project. No formal Board action is required.



**From:** Price, Tom [<mailto:tprice@cdfinc.com>]

**Sent:** Thursday, January 12, 2017 11:10 AM

**To:** Michael Millette <[mmillette@clarendonhills.us](mailto:mmillette@clarendonhills.us)>

**Cc:** Cooper, Jason <[jcooper@cdfinc.com](mailto:jcooper@cdfinc.com)>; Morgan Harty <[mharty@cdfinc.com](mailto:mharty@cdfinc.com)>; Kevin Barr <[kbarr@clarendonhills.us](mailto:kbarr@clarendonhills.us)>;

Dan Ungerleider <[dungerleider@clarendonhills.us](mailto:dungerleider@clarendonhills.us)>

**Subject:** Proposed stormwater Improvements

Mike, I visited the site to determine how to best design the system to achieve the water quality and stormwater reduction functions we are after and prepared the attached concepts. Below is what I found and recommend for the two locations.

#### Norfolk Intersections

Although topo is pretty coarse, it appears that it will be difficult to capture runoff beyond direct rainfall by modifying only the islands and the intersection pavement. This is because the islands are generally higher than the surrounding grade and due to the crown of the road. Further, the drainage area to these intersections includes the entire block north to Algonquin Road and therefore the catchment:BMP area ratio would be very large even if we could get the runoff into the islands. Thus, to allow better capture and management of the full drainage area and to improve the BMP area ratio, I recommend that the swale area on the north side of Norfolk Road be included in the improvements as shown in the attachment. In very round numbers, the cost per intersection would be as indicated below. The costs below do not include the storm sewer improvements being planned by CBBEL. However, they may help to reduce those costs.

- Bioretention swales: \$306,000. This includes removal of existing vegetation (turf), excavation and replacement with CA-7 drainage layer, engineered soil layer, and planting with two trees (one per side)
- Bioretention island: \$12,000. This includes removal of existing vegetation, excavation and replacement with CA-7 drainage layer, engineered soil layer, and planting and one tree.
- Permeable paving: \$87,000. This include pavement removal, excavation and replacement with 18" CA-7 base, and the permeable pavers. It does not include curb replacement. It also includes 15% contingency and engineering.
- Total cost per intersection: \$405,000
- Total cost of project (four intersections): \$1,620,000
- **Cost to Village (assuming 75% grant funding and all three components): \$405,000**
- **Cost to Village (assuming 75% grant funding and bioretention swales only): \$306,000**

Due to drainage patterns, elevations, and areas, the most effective portion of the proposed improvements would be the bioretention swales. Thus, if the total cost needs to be reduced, I recommend not redoing the islands and pavement. In general, the islands and surrounding curb appear to be in pretty good shape as do the outside curbs at Indian, Mohawk, and Iroquois. Thus, there does not seem to be a significant need to redo the pavement and islands if there isn't a need. To be conservative, I assumed 75% grant funding for the Cost-to-Village calculation. This assumes that you will only ask for 55% funding from IEPA rather than the allowable of 60% since that should help increase your ranking of the project.

#### Chestnut Alley

The alley appears to be in pretty poor condition, particularly at the west end and therefore I recommend that the whole alley be replaced. Further, it appears that nearly all the buildings on the south side of the alley have external downspouts that drain to grade and onto the alley along with their parking lots. In general, the alley would manage runoff from the alley, south roofs and south parking areas. The bioretention would manage runoff from the north

residential backyards as well as overflow from the alley. You will note that I am only showing bioretention east of the pump station. West of the pump station, there are fences, etc that conflict with installation of bioretention whereas west of the pump station, it is pretty open with the exception of the driveway crossings. Below are the costs. The costs below do not include the proposed storm sewer and pump station improvements being planned by CBBEL. However, they may help to reduce those costs.

- Permeable paving: \$331,000. This include pavement removal, excavation and replacement with 18" CA-7 base, and the permeable pavers. It does not include curb replacement. It also includes 15% contingency and 7% engineering.
- Bioretention swales: \$90,000. This includes removal of existing vegetation (turf), excavation and replacement with CA-7 drainage layer, engineered soil layer, and planting. It also includes replacement of the driveway approaches for the north garages facing the alley.
- Total cost of project: \$421,000
- **Cost to Village (assuming 75% grant funding): \$106,000**

Please let me know what we should include in the proposed plan for the grant application. Once we have good direction, we can proceed with the final concept and cost estimate.

Thanks

**Thomas H. Price, P.E.**

Director of Water Resources Engineering

[TPrice@cdfinc.com](mailto:TPrice@cdfinc.com)

**Conservation Design Forum**

403 W. St. Charles, Lombard, IL 60148

630.559.2004 Direct | 630.559.2000 General | 630.240.7653 mobile

[www.cdfinc.com](http://www.cdfinc.com)

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