

**OPEN HOUSE
2011 COMPREHENSIVE DRAINAGE STUDY
TOWN OF BUCHANAN
SEPTEMBER 13, 2011**

Intent

The Town of Buchanan has experienced stormwater drainage issues for many years in various locations due to flat grades of roadway ditches, poorly constructed culverts/drain piping, property owners filling of ditches as well as natural filling, culverts heaving, and lack of rear yard drainage. This study is focused on the urbanized area of the Town west of De Bruin Road.

Purpose

The purpose of the study was to identify the urbanized “Problem Areas” west of De Bruin Road; other areas may be addressed at a later date. The scope of this study does not include investigating the entire Town, but rather specific areas based on Town records, general knowledge of the stormwater drainage in the Town, and resident complaints. This Study will:

- Create a ranking system for stormwater drainage problems
- Recommend a feasible solution to the problems
- Provide preliminary costs estimate to provide a magnitude of cost to assist in funding

Engineering Work Completed

The Engineering work completed to date consists of the following tasks:

- Reviewed existing drainage concerns to identify the “cause” and location of the concern.
- Developed a Ranking System to provide guidance on the severity of the concern. Section 3 of the Study.
- Completed a field survey of the elevations of selected areas to provide information to evaluate the problem.
- Evaluated the drainage problem and identify the responsible party for resolving the problem.
- Presented the preliminary findings of the Study at a Town Board Meeting.
- Finalize Study based on Town Board Meeting and Public Informational Meeting response.

Study Areas

Springfield Drive Area, Hank Drive Area, and Hickory Park Drive Area

Similarities for these sites include, multiple sub basins, flat slopes, history of drainage problems, residential complaints and shallow driveway culverts.

Options to Consider

While the existing topography and drainage facilities are relatively flat (< 1%) in these areas, the options to consider are as follows:

- “A” - Urbanization of roadway with storm sewer and curb & gutter. This option includes reconstructing the roadway with concrete curb & gutter and full roadway reconstruction which will be designed for on street pedestrian/bicycle facilities including filling of the roadside ditch.
- “B” - “Mini” storm sewer below the roadside ditches. This option includes constructing a smaller diameter storm sewer on each side of the road along the ditch bottom or slopes with yard drains including full roadway reconstruction with 11’ lanes, culvert replacements and gravel shoulders, no on street pedestrian/bicycle facilities.
- “C” - Lining of the roadside ditches. This option includes constructing a concrete ditch liner on each side of the road along the ditch bottom. One estimate includes full roadway reconstruction with 11’ lanes, culvert replacements and gravel shoulders, no on street pedestrian/bicycle facilities, while the other estimate does not include any roadway construction.
- “D” - Regrade the existing roadside ditches and replace the existing driveway culverts. This option includes regrading the ditch on each side of the road. One estimate includes full roadway reconstruction with 11’ lanes, culvert replacements and gravel shoulders, no on street pedestrian/bicycle facilities, while the other estimate does not include any roadway construction.

*Three of the four options may result in stormwater treatment losses that may or may not have a significant impact on the Towns overall compliance with the WDNR regulations.

The preliminary cost estimates for the options described are shown.

OPTIONS		\$/CENTERLINE FOOT
A	STORM SEWER	\$ 215
B	MINI STORM SEWER	\$ 184
C1	DITCH LINING-RECONSTRUCTION	\$ 168
C2	DITCH LINING-NO ROAD WORK, DRIVEWAY AND CULVERT REPLACEMENT	\$ 102
D1	REDITCHING	\$ 157
D2	REDITCHING - NO ROAD WORK, DRIVEWAY AND CULVERT REPLACEMENT	\$ 85

All estimates include a percentage for technical, administrative, and contingency costs.

All three study areas are very similar in the fact that the existing roadside ditches are relatively flat with most longitudinal ditches grades being less than 1%, and the same four options are feasible in each Study Area. When considering the four potential options, each has their own positives and negatives as outlined in Table 2 of the Study.

Financing

There are several options to finance the selected improvements.

- Option No. 1 - Increase the Town’s current tax rate. This allows the cost to be spread out among all of the Town’s residents, regardless of location relative to a proposed improvement. While this may only result in a relatively small increase, residents outside of the proposed improvement area may not approve of the increase.
- Option No. 2 - Reallocation of the Town’s funds. Simply put, money for any proposed improvement will need to come out of another department’s budget. While this limits direct cost to residents, it may be difficult to provide enough funding by simply reallocating existing funds.
- Option No. 3 – Assess the benefiting Property Owners. Assessments allow the Town to obtain additional money to fund improvements by those directly impacted by the improvement. All, or a portion of the project can be funded by assessments, which can prevent property owners in the Town not directly benefitting from the improvement from contributing towards the project. Assessments can be determined by many different methods including linear foot of frontage property to the improvement, based on assessed value of the property, a per property basis, etc, or by some combination of methods.
- Option No. 4 – Federal and State Grant Funding. Funding may be available through federal and/or state grants, such as the DNR Stormwater Management Funds, which typically pay up to 50% of a project cost (this may only apply towards a pond or other treatment improvements).
- Option No. 5 – Combination of the above alternatives.

Summary

The Study addressed several areas of concern with stormwater drainage. The Study presented several options to resolve and fund the drainage problems. This Study reviewed specific areas; however, the Town Board understands there are other areas within the Town that experience the same drainage concerns. This Study will provide guidance to the Town Board on how to handle each drainage concern that is submitted whether in these areas or not.

Based on the conclusions of the Study, the Town Board will adopt a version of the proposed the Ranking System to provide guidance on the severity of the concern. Each Drainage Concern will be evaluated and ranked. Based on the priority of the concern, the Town will review how the Project will be funded, ie. financing noted above if it is a Town issue. If it is deemed a property owner issue, the Town will notify the property owner/requestor. If it is a Town Project, then it will be scheduled into the Capital Improvement Planning (CIP) over the next 5 years.

In summary, the next steps to be completed are as follows:

- Calculate/summarize the responses from the Survey in tabular format.
- Present the findings to the Town Board for review and discussion.
- Upon completion of the discussion, summarize the discussion items for incorporation into the Final Study.
- Cedar to finalize the Study with the comments and present to the Board for adoption.
- Adopt the Study for a guide in addressing Drainage Concerns in the future for the Town.
- Complete the Ranking System for each Drainage Concern.
- Determine funding and incorporation into the 5 year CIP.