



**CITY OF HAMILTON**

**PLANNING AND ECONOMIC DEVELOPMENT DEPARTMENT**  
**Growth Management Division**

<b>TO:</b> Chair and Members Planning Committee	<b>WARD(S) AFFECTED:</b> Ward 5
<b>COMMITTEE DATE:</b> August 14, 2012	
<b>SUBJECT/REPORT NO:</b> Residential Drainage Assistance Program (RDAP) - 74 Stewartdale Avenue (PED12146) (Ward 5)	
<b>SUBMITTED BY:</b> Tim McCabe General Manager Planning and Economic Development Department	<b>PREPARED BY:</b> George Berenyi (905) 546-2424 Ext. 2624
<b>SIGNATURE:</b>	

**RECOMMENDATION**

That the implementation of drainage improvements identified for 74 Stewartdale Avenue, with an estimated cost of \$25,000, be fully funded from Capital Budget 5180855850 (Storm Events Response Group) subject to:

- (a) An appropriate agreement between the City and owner of the 74 Stewartdale Avenue for the above grant monies based on the provisions of the Residential Drainage Assistance Program (RDAP);
- (b) The City being granted an easement over the proposed catchbasin and storm lead, together with an agreement that specifies maintenance of the catchbasin to be the sole responsibility of the homeowner, in a form satisfactory to the City Solicitor.

**EXECUTIVE SUMMARY**

In October 2011, Council approved staff Report PED10091(d), creating a pilot RDAP to help facilitate and advance solutions to drainage problems throughout the City. The Report estimated that four projects (two larger and two smaller) could be completed over the course of the two-year pilot program. The drainage issues at 74 Stewartdale Avenue have been identified as one of the smaller projects for consideration. In that regard, this project satisfies the main criteria for inclusion in the pilot RDAP:

- Located in an older area of the City of Hamilton;
- Multiple properties are affected;
- Multiple flood events have occurred;
- Public and private work is required to implement a solution; and,
- A significant number of drainage issues have occurred in the area.

74 Stewartdale Avenue is located in Ward 5, in the Rosedale Neighbourhood. Most homes in the area were originally constructed in the 1950s, prior to the existence of any formal grading policies, and provided with a private storm/sanitary combined service.

Since the early 2000s, during recent heavy rainfall events, several homes in the area experienced basement and surface flooding. The flooding at 74 Stewartdale Avenue was exacerbated by the lack of an adequate overland flow route. Steps taken by homeowners to reduce their flooding may have increased the surface flooding and basement flooding potential for 74 Stewartdale Avenue. In effect, the problems appear to have shifted to 74 Stewartdale Avenue.

To eliminate the localized flooding issues at 74 Stewartdale Avenue, staff recommends that a private catchbasin and private storm lead, with backflow valve and a connection to the municipal sewer, be constructed. In this particular case, staff recommends that construction and consulting costs for work on public and private property be paid for by the City, at no cost to the homeowner.

*Alternatives for Consideration - See Page 6.*

**FINANCIAL / STAFFING / LEGAL IMPLICATIONS**

**Financial:** According to the RDAP Terms of Reference, the City will fund required works within the public right-of-way. Residents are expected to pay for recommended drainage works on private property; however, the City will consider contributing to the capital cost on a project-by-project basis. Any project requiring the expenditure of capital funding shall be approved through Committee and Council. For 74 Stewartdale Avenue, it is recommended that the City of Hamilton fully fund the project for the following reasons:

- There is a history of flooding in the neighbourhood due to the lack of an adequate overland flow route;
- The project meets the requirements for the pilot RDAP; and,
- A viable solution has been identified, which staff believes will eliminate the localized flooding issues and have no adverse impact on the receiving sewer system and/or neighbouring properties.

Costs for the project can be broken down as follows:

- Phase 1 - Engineering Investigation: The consultant costs associated with completing the detailed design of drainage improvements are estimated to be \$5,000.
- Phase 2 - Implementation: The construction costs within the public ROW are currently estimated to be \$10,000. As per the RDAP Terms of Reference, the City would normally fund this portion of the project.

The construction costs on private property are currently estimated to be \$10,000. Staff recommends that the City provide funding for the construction work at no cost to the homeowner.

The total project cost of approximately \$25,000. will be funded through Capital Budget No. 5180855850 Storm Events Response Group.

**Staffing:** This particular drainage issue has some history. To date, staff from various Departments has spent considerable time investigating, analyzing, and discussing the drainage issues with the homeowner of 74 Stewartdale Avenue. Going forward, it is recommended the 74 Stewartdale Avenue project be facilitated through the pilot RDAP.

**Legal:** Staff recommends the City only agree to complete the work on the condition that the City be granted an easement over the catchbasin and storm lead, together with an agreement that makes maintenance of the system catchbasin to be the responsibility of the homeowner in a form satisfactory to the City Solicitor. The recommendations here are in keeping with the pilot RDAP approved by Council, which included reduction of potential liabilities of the City for flooding events in particular areas.

## **HISTORICAL BACKGROUND**

### **Background - Residential Drainage Assistance Program**

Staff Report PED10091(d) was received by Committee on October 18, 2011. The Report was prepared by staff in the Development Engineering Division (now Growth Management Division) of the Planning and Economic Development Department, who undertook a comprehensive update of the City's grading policy. Efforts were focused on enhancements to the development approval process.

At the request of Planning Committee, for the "post development" condition (i.e. in existing established neighbourhoods), improved ways to address grading, poor drainage, and swale blockage issues among landowners were also assessed from a process perspective, including potential legal liabilities, staffing, and financial impact. As a result, a two-year pilot project (Residential Drainage Assistance Program (RDAP)) was approved by Council to address these types of "chronic" drainage problems. The Report indicated that four projects (two larger and two smaller) could be completed over the course of the two-year pilot program. Appendix "A" contains a copy of the RDAP Terms of Reference. Staff identified 74 Stewartdale Avenue as a good candidate to be included for consideration in this pilot project as a "smaller" project.

### **74 Stewartdale Avenue - Issues**

74 Stewartdale Avenue is located in the Rosedale Neighbourhood of the City of Hamilton. Most homes in the area were originally constructed in the 1950s and provided with a private storm/sanitary combined service.

It should also be noted that since the 1950s, engineering standards and design guidelines have been revised with respect to lot grading and drainage. Staff believes that the original engineering design, including drainage and grading, satisfied all appropriate standards in effect at that time; however, based on the current engineering standards and guidelines, the existing grading and drainage condition at 74 Stewartdale is not acceptable or permitted if it was associated with a development proposal. The current engineering standards would require that a proper and suitable outlet be provided in a similar situation where a low point in a rear yard is created.

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Since the early 2000s, during recent heavy rainfall events, several homes in the area experienced basement and surface flooding. As a result of the frequency and number of flooding complaints in the area, the Public Works Department has initiated the Rosedale Neighbourhood Flooding Study to investigate and analyze the causes of neighbourhood flooding. As part of this overall Study, staff and consultants have focused considerable effort on investigating flooding issues specific to 74 Stewartdale Avenue. The Study and circumstances make it a good choice for a project under the approved RDAP Pilot Program.

During the initial phase of the Study, the homeowner of 74 Stewartdale reported the following:

- Chronic surface flooding during rainfall events;
- Surrounding properties may have altered original grades and drainage patterns;
- An increase in frequency, duration, and severity of flooding events;
- Property damage;
- Increased operating and maintenance responsibilities. During rainfall events, the homeowner manually operates a system of electrically powered sump pumps to discharge storm runoff to the street; and,
- Severe impact to personal/family life, schedules, and finances.

Preliminary investigations have been completed by the City and consultant, and the following specific observations have been made regarding 74 Stewartdale Avenue:

- The backyard accepts stormwater runoff from a drainage area of approximately 0.4 hectares, which includes approximately 20 houses. Appendix "B" contains a location plan;
- There is a low point located in the rear yard. A catchbasin is located in the rear yard at the lowpoint. The catchbasin does not have a suitable outlet. The catchbasin appears connected to an upstream network of subdrain or tile drain;
- The existing overland flow route is not adequate;
- Many homes in the area have disconnected downspouts; and,
- Previous attempts by the homeowner to create a solution have been unsuccessful, and he has requested professional assistance.

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It was concluded that installation of a private catchbasin and storm lead (with backflow valve) would eliminate the localized flooding issues and have no adverse impact on the receiving sewer system and/or neighbouring properties. Further, it was noted that the proposed solution can be implemented quickly.

**POLICY IMPLICATIONS**

Completion of the recommended drainage improvements for 74 Stewartdale Avenue complies with Council-approved mandate of facilitating drainage solutions for private properties through the pilot RDAP.

**RELEVANT CONSULTATION**

The Public Works Department, Legal Services, and Ward 5 Councillor were consulted through this process and during the preparation of this Report. The homeowner of 74 Stewartdale was also consulted and indicated a willingness to co-operate and utilize the pilot RDAP, including entering into the agreement, and responsibility for future maintenance and granting of the easement.

**ANALYSIS / RATIONALE FOR RECOMMENDATION**

Staff Report PED10091(d) provided the background and framework for establishing the pilot RDAP. Staff identified 74 Stewartdale as a good candidate for the pilot program, as it met the main criteria for inclusion, which includes:

- Located in an older area of the City;
- Multiple properties are affected;
- Multiple flood events have occurred;
- Public and private work is required to implement a solution; and,
- A significant number of drainage issues have occurred in the area.

**ALTERNATIVES FOR CONSIDERATION**

**Residential Drainage Assistance Program**

The drainage issues at 74 Stewartdale satisfy the main criteria established for inclusion in the RDAP pilot program. Therefore, staff has included 74 Stewartdale in the RDAP pilot program as one of the two “small” projects. Staff is also recommending that the City pay for both public and private construction costs associated with the project

because of the nature of the flooding problem. Alternatively, construction costs for the private side could be excluded, as these costs are normally to be borne by the property owner benefiting from the improvement.

### **By-law Enforcement**

Various By-law enforcement alternatives were considered during the preliminary investigation. Staff did not identify any By-law violations that, if enforced, would eliminate or reduce the flooding issues at 74 Stewartdale Avenue.

## **CORPORATE STRATEGIC PLAN**

Focus Areas: 1. Skilled, Innovative and Respectful Organization, 2. Financial Sustainability, 3. Intergovernmental Relationships, 4. Growing Our Economy, 5. Social Development, 6. Environmental Stewardship, 7. Healthy Community

By delivering this project through the RDAP, Council and staff will be demonstrating a commitment to the City's Corporate Strategic Plan. More specifically, completion of this project will contribute to a health and environmentally sustainable community by elimination of the ongoing chronic flooding issues.

## **APPENDICES / SCHEDULES**

- Appendix "A": RDAP Terms of Reference
- Appendix "B": Location Plan

GB/ra  
Attachs. (2)

## **Residential Drainage Assistance (RDA) Program**

### **TERMS OF REFERENCE**

#### **1. Introduction**

The RDA Program is a new pilot program approved by City Council in October 2011 which is designed to provide assistance to residential property owners regarding drainage issues. A typical RDA program has two phases:

Phase 1 – Engineering Assistance

Phase 2 – Capital Improvements/Implementation (on Public lands)

A typical Phase 1 study includes, for example:

- a) Reviewing neighbourhood and lot drainage in an older area of the City (typically pre 1970) which was developed with less attention to drainage than current standards;
- b) Identifying the cause(s) of the neighbourhood drainage problems;
- c) Identifying possible improvements on private lands to provide for better drainage on private lands.
- d) Identifying possible improvements within the public ROW to allow for better drainage on private lands.

After completion of a Phase 1 study, staff will decide whether a Phase 2 study is required. A Phase 2 is envisioned to be warranted in the event that a Phase 1 study indicates that the City is, for example, contributing in some manner to the drainage problem on private lands, or if significant work is required within a public right-of-way where the City may need to either contribute to the cost or front-end costs that are cost recoverable from benefitting owners. Potential Phase 2 works include:

- Designs for additional storm sewer catchbasins/sewers/ditches on public lands to route storm water away from private lands;
- Designs for storm sewer laterals from the municipal storm sewer system to the property line to allow residents to "tie in" private drainage systems (which could be recommended in a Phase 1 study) to the municipal storm sewer system.

Depending on the acuity of the problem, staff shall engage a licensed professional engineering firm to undertake Phase 1 studies.



## **Residential Drainage Assistance (RDA) Program**

### **TERMS OF REFERENCE**

#### **2. Scope of Work**

A Phase 1 study includes, but is not limited to, the following:

- a) Topographic survey and photo inventory of the study area detailing:
  - i. lot grading, low points, etc.;
  - ii. drainage paths including swales, ditches, small watercourses, etc;
  - iii. obstructions to drainage (i.e. sheds, trees, raised gardens, raised tree roots, patios, pools, etc.);
  - iv. roof downspout locations;
  - v. external flow sources;
  - vi. storm sewer catchbasin locations.
- b) Topographic surveys within the public right-of-way to determine major system drainage patterns, catchbasin locations, storm sewer elevations, location of trees, utilities, etc. bordering the study area that may interfere with future drainage works.
- c) Review of existing drainage area plans, topographic maps and subdivision and lot grading plans (if available) to determine drainage patterns;
- d) Site investigations during wet weather to observe drainage patterns, ponding, etc;
- e) Review of historic air photos, flood reports, etc;
- f) Discussions with property owners to determine drainage patterns, drainage history, etc;
- g) Review of engineering plan and profile drawings to determine location, elevation and size of publicly owned drainage features including catchbasins, swales, ditches, storm sewers, etc;
- h) Drainage review to identify extent, type, and cause of drainage obstructions;
- i) Identification and assessment of possible solutions to improve drainage conditions on residential properties including but not limited to:
  - o swale re-instatement;
  - o swale construction;

## **Residential Drainage Assistance (RDA) Program**

### **TERMS OF REFERENCE**

- adjusting lot grades;
  - weeping tile installation with possible surface outlets or outlets to the City's storm sewer system;
  - altering eavestrough drainage patterns and roof downspout discharge locations to reduce the volume of runoff to rear yards;
- j) Feasibility of installing storm catchbasins and storm sewers;
- k) Identification of possible remedial works on public property in order to provide for better drainage on private lands;
- l) Preparation of conceptual/preliminary designs to improve drainage on private lands;
- m) Preparation of cost estimates to improve drainage on a residential lot(s);
- n) Preparation of conceptual/preliminary designs drainage works within the public right-of-way;
- o) Preparation of preliminary cost estimates to construct drainage works within the public right-of-way;
- p) Meetings with residents as required to discuss problems and potential solutions;
- q) Make recommendations to Council regarding the merits of proceeding with a project including the cost to the City and any cost recoveries.

### **3. Program Scope and Funding**

Through the duration of the pilot program, for funding purposes it is assumed that four projects will be undertaken; two larger projects and two smaller projects.

Properties within Hamilton, in particular within the older areas of the City, where a significant number of drainage issues occur, are generally smaller in overall size having minimal sideyards and/or no side yard whatsoever. Access to properties such as these may be restricted and could result in increased labour costs to implement recommended drainage solutions.

Staff has estimated the costs to deliver this program assuming four projects over two years: two smaller areas (<15 properties) and two larger areas (> 15 properties). Ball park costs to deliver the projects through Phase 1 (engineering study) and Phase 2 (implementation) would be as follows:

## Residential Drainage Assistance (RDA) Program

### TERMS OF REFERENCE

#### Phase 1 (all City cost):

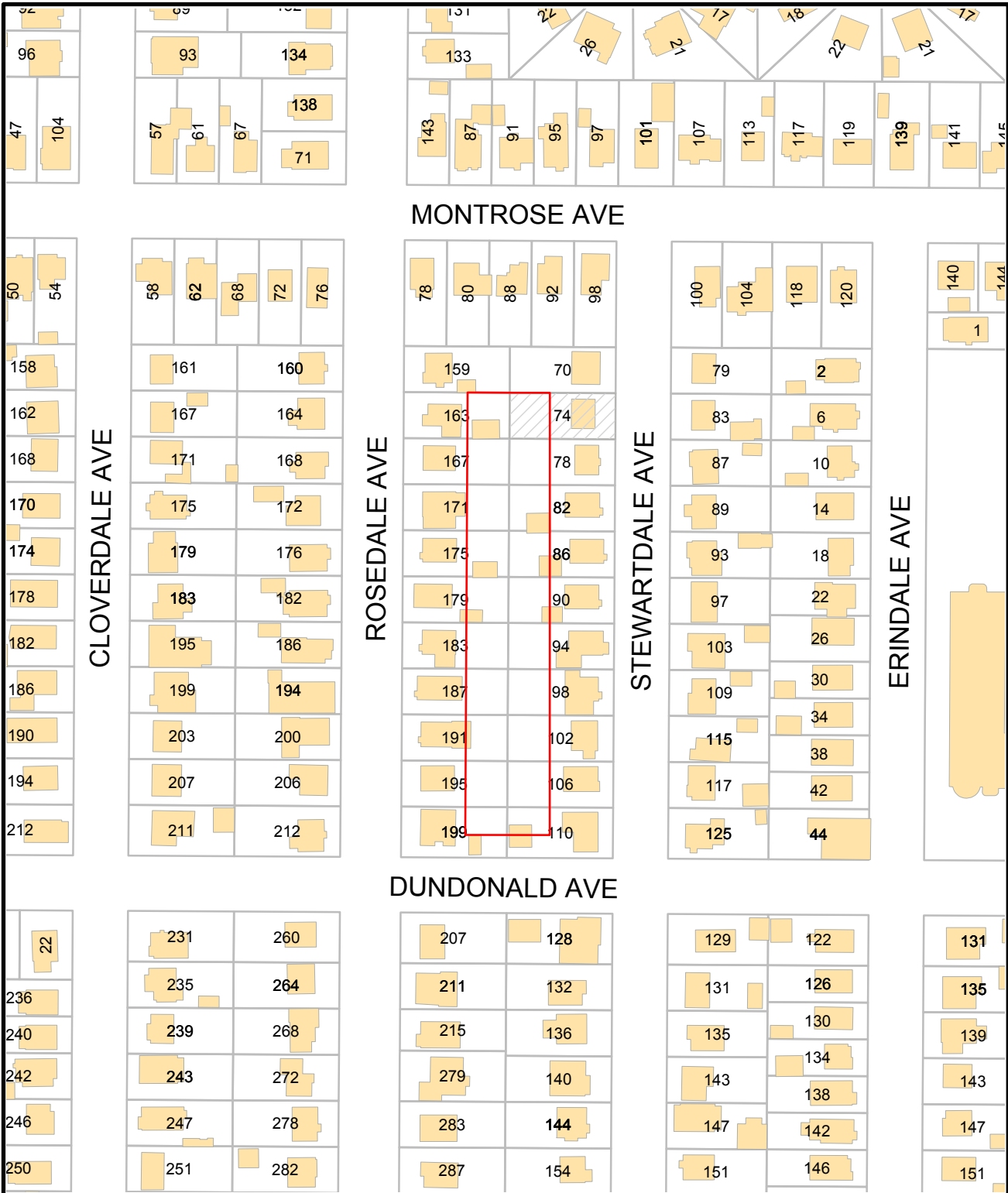
- two small projects (\$10-15,000 each)
- two larger projects (\$15-25,000 each)


#### Phase 2:

- two small projects (\$25-150,000 each); includes City cost of \$15-50,000
- two larger projects (\$100-250,000 each); includes City cost of \$35-100,000


#### Funding of Work

- Residents are expected to complete and pay for recommended drainage works on private property; however, the City will consider contributing to the capital cost on a project-by-project basis depending on the complexity of the project, the number of properties involved, and the nature of the problem.
- In addition to Phase 1 studies, the City shall pay for any portion of work deemed to be a benefit to the City; e.g. conveyance of drainage from a City park.
- The City will fund required works within the public right-of-way using similar approach to the City's Poor Pressure Program.
- Works within the right-of-way can be undertaken by a resident under the City's permitting system or it could be undertaken by City forces on behalf of property owners.
- Any costs incurred by the City deemed to be cost recoverable from property owners will require the passing of a Municipal Act Cost Recovery By-law in order to charge back residents.
- Any project requiring the expenditure of capital funding shall be approved through Council.







  
**Hamilton**  
 PLANNING AND ECONOMIC DEVELOPMENT DEPARTMENT

Date: 18 July 2012

  
 MAP NOT TO SCALE

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### 74 Stewartdale Avenue

-  Approximate Drainage Area
-  Subject Property
-  Buildings
-  Property Boundary