

## 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.

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#### 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;

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- o adjusting lot grades;
- o weeping tile installation with possible surface outlets or outlets to the City's storm sewer system;
- o 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:

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#### 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.