Council Direction:

In September 2009, the Development Engineering Division of the Planning and Economic Development Department was directed by the Economic Development and Planning Committee to report back on “improved ways to address grading, drainage and swale blockage issues including preparation of a self help package for homeowners”.

In that regard, the City has retained MTE Consultants Inc. to assist staff in updating the City’s “Grading Policy for Single and Semi-Detached Dwellings Created Through Development Applications”, the current policy, being Item 21 of the Committee of the Whole Report 02-024, approved by City Council on June 12, 2002.

Information:

As a requirement of the City’s subdivision and land severance/infill development processes, developers are required to retain an engineer to design the grading for their lands, ensure there is a positive outlet to where the storm water runoff can be drained, and that the grading will not negatively impact adjacent landowner’s properties. Staff review and subsequently approve an overall grading plan for the development lands and retain security deposits from developers and builders to ensure the grading, once completed, complies with the approved overall grading plan. Upon completion of the lot grading, the developer’s engineer is required to field check the grading and if satisfactory certify to the City that the grading meets the intent of the approved overall grading plan. At such time that the lot grading is accepted by the City the grading security is released.
Grading for the vast majority of lots is completed and certified under the current system with very few problems. After the lots have been certified for grading, the City’s jurisdiction terminates with respect to the involvement and enforcement of grading and drainage problems on private property.

Occasionally, drainage patterns are disrupted by private homeowners modifying their properties with the installation of fences, gardens, sheds, pools, retaining walls, etc. Modifications such as these sometimes cause drainage problems for neighbouring properties resulting in homeowner complaints received by Councillors and staff. Some homeowners have the expectation that the City should become involved in these private drainage disputes. As such, the Committee requested staff to report back on improved ways to address grading, drainage and swale blockage issues including preparation of a self help package for homeowners.

**Scope of Work**

The fundamental policy issues to be reviewed include:

- The grading approval process (standards and requirements);
- Education; and,
- Enforcement.

This initiative will identify issues the City has been encountering with drainage and grading throughout the land development process and will identify what improvements or enhancements need to be made to the current policy and process. It is anticipated that several measures will be identified and reviewed through consultation with stakeholders, and presented to Committee at a later date.

In addition, the study is also investigating how to better deal with post development issues that arise between property owners; issues where the City currently does not have any jurisdiction or policy that enables staff to have problems rectified on private property. The focus of efforts for dealing with post development grading and drainage issues will be property owner education and possible avenues for enforcement through municipal policy, supporting by-laws and provincial legislation (e.g. Drainage Act, Drainage Tile Act, and Building Code Act).

The education component will be the most critical aspect of the new policy, as it provides the best opportunity to obtain compliance from owners early on. Compared to the resources expended trying to resolve problems later, education is expected to be significantly more cost effective.
The enforcement component, where the City would be involved in conflict resolution and arbitration between property owners is a more significant issue that requires careful consideration. Currently, the City has legislation in the form of by-laws; No. 03-126 for Site Alterations and 80-245 for Land Drainage. However, these two by-laws were not established for the purpose of addressing minor grading and drainage issues and are not appropriate on their own to be used as a mechanism to gain compliance from property owners. In this regard, staff will be reviewing and vetting possible enabling legislation, including enhancements to the above-noted by-laws for Council’s consideration. The review will also include how best to restructure the responsibilities in the Department for more effective enforcement and the cost to implement and deliver the service.

**Work Completed to Date**

Staff from Development Engineering and Building Services have met with MTE Consultants Inc. and reviewed lot grading policies and criteria as well as subdivision agreements from several municipalities across southern Ontario. By comparison, the City’s current policy generally exceeds those of other municipalities. However, those provisions included in other municipalities’ policies are being reviewed and vetted to determine if any other approaches would provide added value to the City’s current policy and criteria. In particular, it is expected that enhancements in the context of rural development will form part of the amended policy.

A questionnaire has also been developed and distributed to City Councillors on March 2, 2010 to gather their experiences, issues, and concerns with lot grading in their Wards and amongst their constituents. Initial feedback identified major areas of concern being:

- Neighbours elevating grades on their properties resulting in ponding;
- General drainage problems; and
- Blocked swales.

In addition, a major concern for Councillors seems to be the lack of ability the City has to become involved in lot grading and drainage issues after lots have been certified for grading and accepted by the City.

**Lot Grading Policy Options Under Investigation**

To improve the general Lot Grading Policy, several options are being investigated including:

1. **General Requirements**
   - Increasing the minimum number of private rear yard catch basins;
   - Reducing the length of swales between private rear yard catch basins;
• Requiring survey elevations to be taken on the top of the building foundation for transitional lots prior to starting of framing;
• Placement of granular material instead of sod along narrow (0.6m) sideyards to deter modification to swales;
• Reduced use of, and limiting types of, retaining walls;
• Flat access strips (pedestrian walkways) be provided between the swale and the dwellings to allow access to side doors or garages;
• Adjustments to the timing of inspections to allow for settlements;
• Reduced use of back to front drainage (to be allowed only in certain circumstances);
• Provision for defined emergency overland flow routes; and
• Specified downspout locations.

2. Special Requirements for Infill Lots

Infill lots are existing properties where new development has since been established adjacent to them. These include existing vacant lots and lots where a building is demolished to allow for construction of a new building. The lots can be created through a land severance or could be an existing lot of record. Grading for infill lots can be challenging to design since adjacent properties have usually been established for several years. Issues related to grading infill lots are flat grades, steep grades, maintaining drainage within the subject property by use of retaining walls and requirements for private rear yard catch basins, and ensuring surface drainage from surrounding properties is not negatively impacted. Options being investigated include:

• Grading plans that clearly demonstrate that the proposed development will not adversely affect the proposed buildings or significantly alter existing drainage patterns or adversely affect neighbouring properties;
• Requiring undisturbed buffer areas along adjacent lots with only internal lot areas being modified;
• Requiring that side and rear yard swales to be located entirely within the infill property;
• Establishing minimum and maximum wall heights and limits on length; and
• Allowing less than 2% slopes on swales to account for flat topography.
3. Special Requirements for Rural Lots

Currently, the City’s Grading Policy applies consistently to properties in both the urban and rural area. It has been found that applying these universal standards in rural or semi rural areas can be problematic given the size of the properties, the lay of the land and location of natural drainage outlets.

While every attempt is made to implement the grading design criteria used in urban areas for rural areas, staff is reviewing those elements that do not conform to the criteria and will evaluate alternative solutions such as:

- If a positive outlet cannot be provided due to the topography or other physical constraints, then the proponent may have to consider and implement other practices to retain water on site (i.e. infiltration galleries, bioswales, water harvesting, etc.) to ensure that surface runoff does not adversely impact neighbouring properties; and

- Requirements to consult with neighbouring properties. We have asked for this in the past when the proponent is recommending retaining walls that we deem as inappropriate or not needed. Communication with neighbouring property owners often leads to better solutions. It will be an option for infill lots.

As a way to better assure a grading plan is implemented without problems, staff is also considering the requirement that for rural lots, plans should include the locations of sewage disposal systems, private water supply systems, driveway entrance culverts including size, length, location, grade. If a positive storm outlet is not available then the location of storm runoff retention areas should also be shown.

4. Lot Grading Approval and Acceptance Process

The current process described in the attached Appendix “A” to Report PED10091 is being considered with the following enhancements:

- City staff completing an on site review of the lot grading with the developer’s consultant prior to approval of the grading;

- Providing as-built survey plans of the grading to the City whereby the engineer is required to take survey elevations at key locations including along the perimeter of the lot, adjacent to the house, on the garage floor, swales, private rear yard catch basins, retaining walls, etc. to ensure finished grades are within a predefined tolerance based on the approved overall grading plan; and

- Potentially having the homeowner involved in the grading certification process.

These options will be investigated and vetted with the Hamilton-Halton Home Builders’ Association (HHHBA) as part of this review process moving forward.
Education

It has become apparent over time that a primary contributor to grading and drainage problems is related to the lack of knowledge of property owners related to impact of grading changes and what the City’s roles and responsibilities are. In light of this, public education will be a critical component of the amended Grading Policy. Staff will be looking at ways to better inform the public and make them more aware of the detrimental effects of modifying grading and drainage. Methods being investigated are:

- Brochures/pamphlets;
- Web site information;
- Information packages at the time of purchase of a new home; and upon occupancy.
- Warning clauses in Purchase and Sale Agreements;
- Media advertising; and
- Highly visible notices placed within new homes.

Enforcement

During the Development Process

Grading and drainage issues prior to certification and acceptance by the City is enforced through the subdivision agreement process, whereby the developer is required to meet grading obligations per the policy and financially secure that grading and drainage works are completed to the City’s satisfaction in accordance with the approved grading plan.

This part of the approval process generally works well; however, when there is a problem, it tends to be difficult and more costly to resolve. In that regard, the City is investigating enhancements to the approvals process such as:

- Increasing the amount of security held for lot grading as an incentive to developers/builders to conform with policy through the development process;
- Retain the lot grading security for some extended period (e.g. two (2) years) after the lot is graded and sodded to ensure that site grades are not altered creating adverse conditions; and
- Retaining a minimum lot grading security (e.g. $10,000-$20,000) until the entire subdivision has been assumed.
Post Development Issues

For issues that arise following the development process (certification and acceptance of grading by the City), staff is also reviewing several possible changes to how the City deals with these matters:

- Blanket municipal easements over rear yard swales for new developments (requires by-law for enforcement) or a 0.45m (18 in.) no touch zone along the perimeter of properties;
- Requiring that approved grading plans be registered on title;
- Modification to the Site Alteration By-Law to address permissible changes to grades on residential lots; and
- Modification to the Land Drainage By-Law or creation of a new by-law to address drainage disputes between property owners.

In order for the City to be more proactive in addressing private drainage and grading issues, this will certainly require additional staff. In this regard, recommendations will be forthcoming regarding how this service could be delivered, including cost to deliver and cost recoveries; i.e. fee for service, fines, etc.

Next Steps

In the coming months, in conjunction with MTE Consultants Inc., staff will:

- Meet with Councillors, the HHHBA and other municipal staff as necessary to fine tune the issues and explore options being considered;
- Evaluate options for Lot Grading Policy, Education and Enforcement;
- Prepare draft lot grading policy recommendations including changes to the approval process;
- Prepare a draft educational homeowners’ package about grading and drainage;
- Prepare a draft policy/process that enables staff to intervene in private drainage and grading disputes;
- Meet with Councillors, the HHHBA and hold a Public Meeting / Information Session(s) to review final recommendations to be considered.
- Prepare a final lot grading policy document and homeowners package and final recommendations regarding a process to facilitate drainage and grading disputes; and
- Present to Committee and Council by October 2010.

Attach.(1)

GN:tl
Overview of Current Lot Grading Approval Process

1. For lots created through the subdivision and/or land severance (consent) process, an overall grading plan showing all lots is prepared by a private engineering consultant on behalf of the developer. Generally these plans include proposed lot corner elevations, minimum basement floor elevation, front of dwelling elevation, swale elevations, location of private rear yard catch basins including top of cover elevation, retaining walls, etc.

2. The plans are reviewed and approved by the Development Engineering Division and forwarded to the Building Services Division. The City retains a lump amount for grading of the entire development based on the total number of lots and retains this security until such time that all lots within the development have been accepted by the City.

3. At the building permit stage, the builder/owner submits a detailed grading plan for the lots, prepared by a professional engineer or Ontario Land Surveyor, to the Building Services Division. These plans show more detail than the overall grading plan including the building foundation layout, proposed ground elevations adjacent to the house, the basement and finished floors, the garage floor, swales, private rear yard catch basins and retaining walls. Other pertinent grading detail is included as required.

4. To ensure compliance with the City’s grading policy, the City retains a $1,000.00 security deposit per lot from the builder/owner. The security is retained until such time that a professional engineer certifies that the lot conforms to the intent of the approved grading plan and the lot grading has been accepted by the Building Services Division by means of a visual inspection. If the grading is unacceptable to the City, the owner is required to revise the grading to ensure it works and conforms to the approved plan and/or have the grading redesigned and the grading plan revised and re-approved by the City.

Regarding infill lots, the process is similar to the subdivision/severance process. Individual grading plans are submitted, reviewed, and subsequently approved by the Building Services Division and a $1,000.00 security per lot is retained until the lot is certified by a Professional Engineer and the lot grading has been accepted by the Building Services Division by means of a visual inspection.

For all of the above referenced processes, once the City has accepted the lot grading certificate the City’s jurisdiction ceases. If residents make modifications to their lot grading after the certification process, any subsequent grading and/or drainage issues resulting from these modifications become a civil matter amongst the private property owners. Problems that may arise from this are:
• Disputes between neighbours regarding who is responsible for resulting drainage problems;
• Legal costs related to one neighbour taking legal action against another;
• Owner expectations regarding who should be responsible to resolve the drainage problem and at whose cost;
• Owner expectations that the City should be involved in rectifying drainage problems on private property; and
• “Snowball effect” when one property owner elevates their property resulting in a disruption to drainage patterns, abutting owners tend to raise their grades in an attempt to prevent surface runoff from entering their property.