

## Request for Decision

### Final Report Respecting the Completion of Infrastructure Works in New Developments

Presented To:	City Council
Presented:	Tuesday, Mar 31, 2015
Report Date	Wednesday, Mar 25, 2015
Type:	Referred & Deferred Matters

### Recommendation

THAT the City of Greater Sudbury receive the report from the Acting General Manager of Growth and Development dated February 9, 2015 respecting the Completion of Infrastructure Works in New Developments;

AND THAT, staff be directed to amend subdivision draft approvals as set out in the report from the Acting General Manager of Growth and Development dated February 10, 2015 respecting the Completion of Infrastructure Works in New Developments.

### Finance Implications

No Financial Implications

### **BACKGROUND**

On June 24, 2014 Council adopted the following resolution:

*"WHEREAS land developers are responsible for certain infrastructure works as part of their developments;*

*AND WHEREAS certain infrastructure works are undertaken at different times or phases of the development, as required;*

*AND WHEREAS specific timelines are not necessarily imposed on the completion of those infrastructure works;*

*AND WHEREAS, on occasion, certain deficiencies in the infrastructure works undertaken and/or completed by the developers are identified;*

*THEREFORE BE IT RESOLVED that the City of Greater Sudbury Council direct staff to provide a*

#### Signed By

##### **Report Prepared By**

Jonathan Clark  
Subdivision/Site Plan Control Engineer  
*Digitally Signed Mar 25, 15*

##### **Division Review**

Mark Simeoni  
Acting Director of Planning Services  
*Digitally Signed Mar 25, 15*

##### **Recommended by the Department**

Paul Baskcomb  
Acting General Manager of Growth & Development  
*Digitally Signed Mar 25, 15*

##### **Recommended by the C.A.O.**

Doug Nadorozny  
Chief Administrative Officer  
*Digitally Signed Mar 25, 15*

*report to Council at the August 12th Council meeting, providing recommendations on how the City can implement and enforce timelines for the completion of required infrastructure work, particularly when deficiencies in the works conducted are identified, and have a negative impact on neighbouring properties.”*

In response to this resolution, staff prepared a preliminary report (attached) for Council's consideration. Further to this, Council directed that staff consult with the City's Development Liaison Advisory Committee (DLAC) members to get their input and comments.

On September 19, 2014, DLAC met and considered the resolution and the preliminary staff report regarding the Implementation & Enforcement of Completed Infrastructure Works on Development Projects.

At the DLAC meeting, it was determined:

1. That a subdivision subcommittee made up of City staff and members of the development community should be established to review and provide recommendations on this matter.
2. That the subdivision subcommittee, examine potential improvements to the subdivision approval process as a whole.
3. That it is important where new policies are adopted that they do not discourage or have a negative cost impact on development.
4. On October 23, 2014, the Development Liaison Advisory Subdivision Subcommittee (DLASS) met to review how the City could implement more specific time frames and ensure timelines are met, by developers, for the completion of required infrastructure works in subdivisions.

On December 9, 2014, DLAC considered the following recommendations developed by DLASS at their October 23, 2014 meeting.

1. That the City's process for having the developer correct deficiencies in a timely manner has improved significantly and that the developers are being more diligent in finalizing the subdivision agreement conditions. The system is generally working and there is no need to change the entire process because of the odd issue.
2. That it is important to review the process and continue to have a thorough discussion between the City and the Developers on issues relating to improvements to the subdivision process.
3. That the Subdivision and Site Plan Manuals be updated, and a draft presented for review by the Subcommittee.
4. That a draft policy be prepared to tie the start of a separate 2 year maintenance period to the completion of "Major deficiencies" where noted by the City. What constitutes a Major Deficiency is defined in Appendix A, item II, 2.0. as follows:

A "Major Deficiency" is defined and identified by the city as any deficiency which affects the safety of the public, usability of the service, or is related to underground works, which to correct, requires the removal and replacement of any surface works.

(Note, the previous CGS policy required that the deficiencies be completed prior to the end of the 2

year maintenance period which starts at initial acceptance of the subdivision. The revised policy will encourage developers to complete the deficiencies shortly after they have been identified.)

5. That Developers notify the City, via email, when key construction activities are taking place during subdivision and off-site servicing construction. City development engineering staff would monitor these activities and undertake site reviews as appropriate.
6. That additional Subdivision Subcommittee meetings be held regularly to further improve the Subdivision/Site Plan Policies.

No comments or concerns were raised by DLAC at their meeting on December 9, 2014, regarding the above recommendations.

Further meetings of DLASS were held at which time they considered two potential subdivision conditions of draft approval that would further encourage and assist in the timely completion of outstanding infrastructure. The first condition, set out below, confirms that subdivisions may register in phases which recognizes a practice which is common in the City and throughout the Province.

1. Final approval for registration may be issued in phases to the satisfaction of the Director of Planning, provided that:
  - a) phasing is proposed in an orderly progression, in consideration of such matters as the timing of road improvements, infrastructure and other essential services; and
  - b) all agencies agree to registration by phases and provide clearances, as required, for each phase proposed for registration; furthermore, the required clearances may relate to lands not located within the phase sought to be registered.

The second condition considered by DLASS addressed the issue of major outstanding infrastructure from previous subdivision phases having to be completed prior to registering a new phase as follows:

2. That the owner shall have completed all major outstanding infrastructure deficiencies that are critical to the overall function of the subdivision in previous phases of the plan that have been registered, or have made arrangements for their completion, prior to registering a new phase of the plan, to the satisfaction of the General Manager of Growth and Development and the General Manager of Infrastructure Services.

On February 6, 2015, DLAC considered both conditions 1 and the revised condition 2 (with the underlined wording) and no concerns with the proposed conditions were raised.

## CONCLUSIONS

This report responds to Council's June 24, 2014 resolution by providing recommended improvements to the existing subdivision/site plan approval process. These recommended changes are set out as follows:

1. That the City's Subdivision and Off-Site Servicing Certification Requirements (Appendix A), be amended to:
  - a) Tie the start of a separate 2 year maintenance period for the completion of "Major deficiencies" where noted by the City and that Major Deficiency be defined, as any deficiency which affects the safety of the public, usability of the service, or is related to underground works, which to correct, requires the removal and replacement of any surface works, and;
  - b) Require that developers provide the City with a construction schedule prior to

construction commencing within the existing right of way or future right of way with the City to be notified of any changes to the start dates.

2. That Development Engineering Approvals staff monitor developer construction activities and undertake site reviews as appropriate.
3. That the City's Subdivision and Site Plan Manuals continue to be updated, in consultation with the Development Liaison Advisory Subdivision Subcommittee.

Staff will be making the above amendments to the subdivision and off-site certificate requirements. Further process changes will be reviewed and implemented, as required, on an ongoing basis through DLAC and the Subdivision Subcommittee (DLASS).

The changes recommended in this report to the City's Subdivision and Off-Site Servicing Certification requirements will be made available online and will form part of the updated Subdivision and Site Plan Manuals.

4. In addition to the above, it is recommended that all currently draft approved plans of subdivision in the City be amended to include the wording in a) and b) below, as conditions of draft approval and that the wording in a) and b) below, be included as standard conditions in all future draft plan of subdivision approvals in the City.

a) Final approval for registration may be issued in phases to the satisfaction of the Director of Planning, provided that:

- i) phasing is proposed in an orderly progression, in consideration of such matters as the timing of road improvements, infrastructure and other essential services; and
- ii) all agencies agree to registration by phases and provide clearances, as required, for each phase proposed for registration; furthermore, the required clearances may relate to lands not located within the phase sought to be registered.

b) That the owner shall have completed all major outstanding infrastructure deficiencies that are critical to the overall function of the subdivision in previous phases of the plan that have been registered, or have made arrangements for their completion, prior to registering a new phase of the plan, to the satisfaction of the General Manager of Growth and Development and the General Manager of Infrastructure Services.

# Request for Decision CITY COUNCIL



Type of Decision					
Meeting Date	August 12, 2014			Report Date	July 25, 2014
Decision Requested	<input type="checkbox"/> Yes	<input type="checkbox"/> No	<input type="checkbox"/> Closed Meeting Category Reviewed with City Solicitor		
	Direction Only				

Applicable Category	
A meeting or part of a meeting may be closed to the public if the subject matter being considered is pursuant to the Municipal Act, 2001. Please indicate the applicable category:	
<input type="checkbox"/> Security of Property	<input type="checkbox"/> Litigation or Potential Litigation
<input type="checkbox"/> Personal Matters (Identifiable Individual)	<input type="checkbox"/> Solicitor-Client Privilege
<input type="checkbox"/> Acquisition or Disposition of Land	<input type="checkbox"/> Education or Training
<input type="checkbox"/> Labour Relations / Employee Negotiations	
<input type="checkbox"/> Closed meeting under another Act - Specify Act:	

Report Title	
Implementation and enforcement of completed infrastructure works on development projects	
<b>Budget Impact</b> <input type="checkbox"/> This report has been reviewed by the Finance Division and the funding source has been identified. Financial Implications:	<b>Recommendation</b> <p>That the City of Greater Sudbury receive the report from the General Manager of Growth and Development dated July 25, 2014 respecting the completion of infrastructure works by developers;</p> <p>And, that the General Manager of Growth and Development be directed to consult with the City's Development Liaison Advisory Committee on to the City's development practices/procedures as set out in the report dated July 25, 2014;</p> <p>And, that following consultation with the Development Liaison Advisory Committee a report be prepared for consideration by the Planning Committee.</p>
<b>Recommended by the Department</b> Name: Paul Baskcomb Title: Acting General Manager	<input type="checkbox"/> <b>Recommendation Continued</b> <b>Recommended by the C.A.O.</b> Doug Nadorozny Chief Administrative Officer

### Report Prepared By

Name: Jonathan Clark  
Title: Subdivision/Site Plan Control Engineer

### Division Review

Name: Mark H. Simeoni  
Title: Acting Director of Planning Services

## **BACKGROUND**

On June 24, 2014 City of Greater Sudbury Council adopted the following resolution.

WHEREAS land developers are responsible for certain infrastructure works as part of their developments;

AND WHEREAS certain infrastructure works are undertaken at different times or phases of the development, as required;

AND WHEREAS specific timelines are not necessarily imposed on the completion of those infrastructure works;

AND WHEREAS, on occasion, certain deficiencies in the infrastructure works undertaken and/or completed by the developers are identified;

THEREFORE BE IT RESOLVED that the City of Greater Sudbury Council direct staff to provide a report to Council at the August 12<sup>th</sup> Council meeting, providing recommendations on how the City can implement and enforce timelines for the completion of required infrastructure work, particularly when deficiencies in the works conducted are identified, and have a negative impact on neighbouring properties.

In response to this resolution a review of the City of Greater Sudbury's existing subdivision approval practices was undertaken. In addition staff contacted other municipalities to consider best practices. The following municipalities were contacted.

- North Bay
- Sault Ste. Marie
- Ottawa
- Kingston
- Hamilton

Generally, all municipalities contacted indicated that they have experienced a range of response times with respect to development proponents addressing deficiencies; however, they further indicated overall satisfaction with their existing subdivision approval policies which are very similar to those in Greater Sudbury, and that only on very rare occasions have they invoked a standard subdivision agreement clause to use securities to complete deficient work.

Some municipalities noted in particular that compliance with the approved lot grading plan, on the part of the builder, was an ongoing issue and that existing policies could be improved in this area. Municipalities which experienced fewer lot grading issues typically use some form of lot grading security to enforce compliance.

The Subdivision approval process for all municipalities contacted was generally similar to the process adopted by the City of Greater Sudbury as described in Appendix A. The main policy differences between municipalities are as follows:

- 1) Amount of inspection time provided by the municipality. (I.e. some municipalities provide fulltime inspection, whereas others rely on the consultant for full-time inspection and the municipality inspects only during the approval process.)
- 2) Requirements for municipal approval and assumption of the work. (I.e. some municipalities require rear yard swales to be completed prior to issuing permits, whereas others require this to be completed as part of the lot grading and retain security deposits for this work.)
- 3) Percentage of securities retained prior to any site alteration/pre-servicing.
- 4) Percentage of securities retained during the maintenance period.
- 5) Duration of the maintenance period.

Notwithstanding the above, the general strategies to enforce compliance on the part of the developers are as follows:

- 1) Obtaining securities from Developers prior to the start of any site alteration/pre-servicing.
- 2) Reducing securities for completed work and retaining securities for deficient work, uncompleted work, and completed work under a maintenance period.
- 3) Requiring major deficiencies noted during the municipalities inspection to be corrected prior to the start of the maintenance period.
- 4) Where deficiencies are not corrected and adversely affect neighbouring properties, warning letters are provided and in rare cases securities are used to correct the deficiencies.

### **CURRENT CITY OF GREATER SUDBURY SUBDIVISION APPROVAL POLICY**

The City of Greater Sudbury's Subdivision Approval policy is incorporated into two documents. The standard Subdivision Agreement, & Off-site Servicing Agreement and the document entitled Certification Packages Issued for Initial and Final Acceptance provided to developers during preconstruction meetings to ensure they are aware of what certification materials need to be submitted prior to acceptance of the subdivision.

The subdivision approvals policy noted in the above documents are attached as appendix A.

The City's current subdivision approval process has served the community well. Subdivision approval authority was granted to the Region of Sudbury in 1978. Since this time the process has continued to change and evolve, based on years of experience, to reflect changes in engineering standards and construction practices. With this in mind we expect that there is always opportunity to revisit current policies and procedures to achieve improved outcomes with the subdivision approval process.

Based on our consultation with other municipalities in consideration of the resolution of Council, staff have identified a few areas which we feel are good starting points for discussion with the local development community. These include but are not limited to:

- 1) Consolidation of current subdivision and site plan approval policies and engineering design standards.
- 2) Security amounts collected for lot grading and approval process for lot grading certificates.
- 3) Security amounts collected prior to subdivision site alterations and pre-servicing.

- 4) Timelines for acceptance of services, roads, and sidewalk installation and grading of rear yard swales and boulevards.
- 5) Frequency of city inspections and timelines for the correction of deficiencies in relation to the start of the maintenance period and subdivision acceptance process.

### **DISCUSSION WITH THE LOCAL DEVELOPMENT COMMUNITY**

Given that any future changes in these areas would affect development processes and proponents, and considering a request from the Sudbury Home Builders Association that this matter be referred to the Development Liaison Advisory Committee (DLAC) to provide City Council with direction from an Industry perspective, we recommend that thorough consultation with DLAC be pursued on the above noted points and any other opportunities arising from those discussions. Upon completion of these discussions a report would be brought back to Planning Committee summarizing the comments and any recommendations.

### **CONCLUSION**

Opportunities to achieve continuous improvement in our development approval process are sought on an ongoing basis. This report provides an overview of existing processes and suggests possible directions for a further response to Council's request.

Consultation with the City's Development Liaison Advisory Committee (DLAC) on the issues raised by the Council Resolution and discussed in this report is recommended to receive their input and ideas. Consultation with DLAC may also identify other actions which would assist in addressing Council's June 24th, 2014 resolution. The next meeting with DLAC is anticipated for September, at which time this matter will be discussed. Following those consultations, a report will be prepared to the Planning Committee on the outcome of that consultation and any revisions to the City's process/practises to address infrastructure deficiencies on development projects.



# APPENDIX A

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## CURRENT CITY OF GREATER SUDBURY SUBDIVISION APPROVAL POLICY

### 1) Pre-servicing of Subdivision

Typically a developer pre-registers the subdivision prior to construction. A subdivision agreement is created and the developer provides a deposit for 100% of the works. However, a developer may choose to forgo pre-registering the subdivision and may grade and install all the services and roads up to base asphalt. The developer must first have the subdivision drawings approved by the City, and provide a pre-servicing letter and Certificates of Approval for Sewer and Water services from the MOE. No security deposits are retained for this approach; therefore this is generally the preferred option by most developers.

Once the pre-servicing requirements have been satisfied a pre-construction meeting with the City is held between the City, the developer, and its agents to review the Construction Approval requirements for Initial Acceptance and Final Acceptance of the works.

### 2) Initial Acceptance of the Work

Upon completion of the sewers, water mains, service laterals, street lighting, road installation to base asphalt, full curb, and completion of all surface features including fencing, noise berms, and drainage ditching (excluding rear yard swales), etc., the following is submitted for Initial acceptance:

- Engineers Certification letters certifying that the works are installed in general conformance with the approved drawings.
- A CCTV inspection of all sewers, laterals, and sub-drains and a letter from the engineer certifying that there are no deficiencies.
- As-constructed drawings.
- Securities are collected in the amount of a 10% maintenance deposit for completed works, and 100% deposit for uncompleted works (i.e. sidewalks, boulevard sod, and rear yard swales).
- Cash contributions are collected for surface asphalt and tree planting, etc.

The review and acceptance of these Initial Acceptance requirements initiates the following:

- The Developer may apply for a conditional building permit to build up to 5 model homes.
- The Developer may start the subdivision registration process. Upon Registration of the Subdivision plans the owner may apply for full building permit and the City legally assumes the road and provides snow removal and residential garbage pick.
- The start of the 2 year maintenance period for all completed works.
- The City will conduct an initial inspection of the site. Any deficiencies noted will be provided to the developer to be corrected prior to the end of the 2 year maintenance period.

### 3) Maintenance Inspection and Final Road Assumption

After the expiration of the 2 years maintenance period, and once the developer has completed the installation of the sidewalks, and sod (boulevard, ditches and rear yard swales) and has corrected any deficiencies noted in the initial acceptance, the following is submitted:

- Engineers Certification letters certifying that the works are installed in general conformance with the approved drawings.

- A CCTV inspection of all sewers, laterals, and sub-drains and a letter from the engineer certifying that there are no deficiencies.

The review and acceptance of the above items initiates the following:

- City will conduct a maintenance inspection of the site. Any deficiencies noted are provided to the developer to be corrected, and securities are retained to address any outstanding deficiencies. Typically an inspection of the sidewalk and sod is completed at this time which starts the 2 year maintenance period for these works.
- Uncompleted works securities are released as warranted.
- All maintenance securities are released except those required to address any deficiencies.
- Where no deficiencies that would affect the paving of surface asphalt are noted a request is sent to the City's Infrastructure Department to place surface asphalt.

4) As-built lot Grading Certificates:

The builder completes the lot grading and provides an as-built lot grading certificate prepared by a lot grading professional to the City for approval. If the as-built lot grading certificate is in general conformance with the approved lot grading plans, then the certificate goes on record as being approved, otherwise the lot grading professional and the builder are notified to correct the deficient lot grading.

## APPENDIX A

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### Subdivision Certification Requirements - Draft Rev 3 – November 20, 2014

# **SUBDIVISION AND OFF-SITE SERVICING** **CERTIFICATION REQUIREMENTS**

**Rev 3 – November 20, 2014 (DRAFT)**

(changed items highlighted)

## **I. CONSTRUCTION PREREQUISITES**

### **1.0 Pre-construction Survey**

A preconstruction survey of all existing infrastructure within the right of way (ROW) affected by the work must be submitted to the City prior to construction activity within the ROW. The survey must include photos and clearly identify and locate all pre-existing conditions.

### **2.0 Construction Schedule**

A construction schedule must be provided to the City prior to construction within the existing ROW or future ROW. The construction schedule must identify the estimated start dates and duration of work for the following key construction activities:

- sewer and/or water main installation,
- sub-grade proof rolling,
- granular A and B placement,
- curb layout,
- base asphalt placement.

The City must be notified of any changes to the above start dates.

## **II. INITIAL ACCEPTANCE OF THE WORKS**

### **1.0 Certification Packages Issued for Initial Acceptance**

The following support documentation will constitute the minimum requirements for initial acceptance:

#### **1.1. Watermain Certification**

##### **1.1.1. Certification**

Provide a certification letter signed and sealed by a Professional Engineer to verify general conformance with the approved project drawings and specifications.

##### **1.1.2. Bedding Gradation Analysis**

A bedding gradation analysis must be provided from a certified lab to verify the bedding conforms to the minimum gradation requirements defined in Table 2A of GSSS 1010.

#### 1.1.3. Bedding Compaction

Bedding compaction results are not required to form part of the certification package.

#### 1.1.4. CGS – Watermain Test Report / Procedures

A City of Greater Sudbury Watermain Test Report / Procedures form must be completed in full and submitted to both the Manager of Construction Services and the Chief Field Inspector prior to connection to the existing main. A copy of this report must also be sent to the Supervisor of Development Engineering for review and initial acceptance.

#### 1.1.5. Water Quality Test Results

The certification package must include results of the water quality tests performed in conjunction with the CGS – Watermain Test Report/Procedures. These tests must indicate that the minimum requirements of the Ministry of the Environment – Ontario Drinking Water Objectives have been met. These results are to be forwarded to the Manager of Construction Services, the Chief Field Inspector, and the Supervisor of Development Engineering.

#### 1.1.6. Tracer Wire Field Inspection Report

Submit the City's "Tracer Wire Field Inspection Report" which shall be completed by a third party.

### 1.2. Sanitary/Storm Sewer and Subdrain Certification

#### 1.2.1. Certification

Provide a certification letter signed and sealed by a Professional Engineer to verify general conformance with the approved project drawings and specifications.

#### 1.2.2. Bedding Gradation Analysis

A bedding gradation analysis must be provided from a certified lab to verify the bedding conforms to the minimum gradation requirements defined in Table 2A of GSSS 1010.

#### 1.2.3. CCTV Camera Inspection

Results of the CCTV camera inspection must indicate that the sanitary sewer, sanitary laterals, storm sewer and subdrain was placed on the proper alignment without damage, sags or debris.

Close circuit television (CCTV) camera inspections requirements (of sewer mains and lateral) are to follow:

- All digital data are to be coded following the WRc Manual of Sewer Condition Classification, WRc 4th edition, American Society of Civil Engineers or a comparable manual.

- All videos are to be coded utilizing WRc codes, and provided in .wmv format along with the database.mdb (or other approved .mxd) files.
- All photos are to be provided in .jpg and reports in .pdf.

All digital image recordings shall be of quality that all minor defects (hairline cracks, etc.) be clearly visible, and in the main sewers, the colour of the pipe inspected be true to the actual conditions.

Video files shall commence with a minimum 10 second data information screen including: data and time of inspection, location description, contractor and operator name.

Technicians assigned to data gathering shall have a minimum of three (3) years related experience in sewer inspection, using Closed Circuit Television Equipment and Data Collection and shall be capable of report all conditions using WRc defect codes.

The Engineer shall confirm they have reviewed the cctv reports and will provide their comments. Comments will verify the pipes are satisfactory and/or identify areas of damage, sags, debris etc. that should be discussed with City representatives prior to City acceptance.

#### 1.2.4. Pressure Leakage Tests

Infiltration or exfiltration testing shall be completed and meet the requirements of OPSS 410. Where exfiltration testing is required, sanitary sewer test results shall be submitted. Where infiltration testing is required, storm and sanitary test results shall be submitted.

### 1.3. Roads / Curbs Certification

#### 1.3.1. Certification

Provide a certification letter signed and sealed by a Professional Engineer to verify general conformance with the approved project drawings and specifications.

#### 1.3.2. Backfill Material

A letter must be provided from the engineer stating that the backfill material conforms to City requirements and the site specific geotechnical report. This letter must also state that sufficient compaction was obtained on this material.

#### 1.3.3. Base Material – Granular “B”

##### a. Gradation Analysis

A gradation analysis must be provided from a certified lab to verify the Granular “B” conforms to the minimum gradation requirements defined in Table 2A of GSSS 1010.

b. Compaction Tests

Results of the compaction testing must indicate that the Granular “B” material has been compacted according to the requirements set out in GSSS 501 and Method A of OPSS 501.

Compaction testing must be performed at 15 meter intervals along the roadway in a 3-point cross section for each lift of material and all test results must be supplied to the City.

Please note that the material specified with the City approved construction drawings must be used. If an alternate type of Granular ‘B’ material is to be contemplated, this must be done as part of the construction drawing review process.

1.3.4. Base Material – Granular “A”

a. Gradation Analysis

A gradation analysis must be provided from a certified lab to verify the Granular “A” conforms to the minimum gradation requirements defined in Table 2A of GSSS 1010.

b. Compaction Tests

Results of the compaction testing must indicate that the Granular “A” material has been compacted according to the requirements set out in GSSS 501 and Method A of OPSS 501.

Compaction testing must be performed at 15 metre intervals along the roadway in a 3-point cross-section and all test results must be supplied to the City.

1.3.5. Asphalt Works

a. Materials Analysis

The analysis of the asphalt material must be provided from a certified lab to show that this material conforms to the minimum requirements defined in OPSS 1150 and the supplier’s mix design approved by the City.

b. Compaction Tests

Results of the compaction testing must indicate that the asphalt material has been compacted according to the requirements set out in GSSS 310 and OPSS 310.

Compaction testing must be performed at 15 meter intervals along the roadway in a 3-point cross-section for each lift of material and all test results must be supplied to the City.



#### 1.3.6. Concrete works

##### a. Concrete Mix Design

Provide a copy of the concrete mix design and the applicable performance requirements as required to verify compliance with OPSS.MUNI 1350.

##### b. Slump, Air and Compressive Strength of Concrete

- i. For concrete curb and gutter systems, concrete testing must indicate that the concrete used meets the requirements set out in OPSS 353.
- ii. For sidewalk installations, concrete testing must indicate that the concrete used meets the requirements set out in OPSS 351.
- iii. For any other concrete works, materials, construction, and testing must comply with the relevant GSSS, OPSS, GSSD, OPSD, and any additional requirements set forth on the City approved construction drawings.

The submitted compressive strength test results from a certified lab must meet the requirements set out within the relevant GSSS and OPSS (for example, if 28 day test results are the standard, the submitted results must meet this requirement).

#### 1.3.7. Surface Features

All surface features that form part of the City approved construction drawings must be constructed prior to initial acceptance. This includes all fencing, noise berms, and drainage ditching (excluding rear yard swales), etc.

#### 1.4. Stormwater Management Facilities

The certification package for stormwater management facilities (where applicable) must be in the form of a letter from the Developer's Engineer stating that these facilities have been constructed in compliance with the City approved construction drawings and the City approved Stormwater Management Report. This letter must be accompanied by all relevant materials testing data.

#### 1.5. Additional Requirements

In addition to the above noted requirements, the following will form part of the initial acceptance package:

- a. Digital photographs of the installation of each major appurtenance installed (maintenance holes, catchbasins, valves, hydrants) must be provided. These photographs must be clearly labeled and provide sufficient as-constructed information (number of grade adjustment rings, height of hydrant above grade, etc.).

- b. A comprehensive listing of all infrastructure to be taken over by the City must be provided as part of the initial acceptance package. This includes, but is not limited to; lengths of mains, number and location of maintenance holes, catchbasins, valves, hydrants, curb stops, length of roadway, curbing, and sidewalk. A spreadsheet template will be provided at a later date by Infrastructure Services for your use. The location accuracy and coordinate system will be defined at that time.
- c. A red-line drawing showing as-constructed data must be provided to the City as part of the initial acceptance package. The as-constructed plans (to City drafting standards) must be submitted to the City within 3 months of the initial acceptance date for the works.

## **2.0 Construction Approval and Inspection for Initial Acceptance**

Upon the City's acceptance of the Initial Acceptance Package, the 2 year maintenance period will commence and the City will conduct an inspection of the works within 3 months (During the months of May through October). All "Major Deficiencies" identified in this inspection must be corrected within a time period as established by the City. A separate 2 year maintenance period will commence for these deficiencies and any affected surface works, upon the City's approval of the corrected "Major Deficiencies". The follow up inspection of the work will be conducted within 3 months (During the months of May through October).

A "Major Deficiency" is defined and identified by the city as any deficiency which affects the safety of the public, usability of the service, or is related to underground works, which to correct, requires the removal and replacement of any surface works.

The City will provide only one inspection at no charge during initial acceptance. A fee will be assessed, in accordance with City Council's Policy, for any subsequent inspections required to determine if the deficiencies have been rectified.

## **III. FINAL ACCEPTANCE OF THE WORKS**

### **1.0 Certification Packages Issued For Final Acceptance**

#### **1.1.1. Certification**

- a. Once the maintenance period has expired, the Consultant's Engineer must attend the site and perform a final inspection of the works. This includes, but is not limited to; CCTV camera inspections completed in accordance with the Initial Acceptance requirements for sanitary mains, sanitary laterals, storm sewers, and subdrains, adjustment of appurtenances as required (valves, hydrants, curb stops), review of grading, sodding, and other surface features (swales, boulevards, fencing, walkways, easements, etc.), and a review of all concrete works.
- b. A letter must be provided from the Consultant's Engineer stating that they have reviewed the site and verify the works are in general conformance with the City approved construction drawings.

## **2.0 Construction Approval and Inspection for Final Acceptance**

Upon the City's acceptance of the Final Acceptance Package and the end of the 2 year maintenance period, the City will conduct a final inspection of the works within 3 months (During the months of May through October). All Deficiencies identified in this inspection must be corrected prior to the release of the Maintenance Deposit.

Uncompleted works deposits will be released for all works completed at the time of inspection.

Upon the City's acceptance of the sidewalk portion of the Certification Package a 2 year maintenance period will start for the sidewalk and 10% of the sidewalk construction cost will be withheld from the release of the uncompleted works deposit until the end of the 2 year sidewalk maintenance period.

The City will provide only one inspection at no charge during final acceptance. A fee will be assessed, in accordance with City Council's Policy, for any subsequent inspections required to determine if the deficiencies have been rectified or to confirm the completion of any remaining uncompleted works.

The City will provide only one inspection at no charge during the 2 year sidewalk maintenance inspection. A fee will be assessed, in accordance with City Council's Policy, for any subsequent inspections required to determine if the deficiencies have been rectified.

### **Rev 1 - 2013.03.08**

- certification letter added for clarification
- tracer wire report added
- sanitary laterals added for clarification
- consulting engineer to review cctv added for clarification
- submission of concrete mix design added

### **Rev 2 – 2014.02.28**

- clarification of cctv requirements at final acceptance

### **Draft Rev 3 – 2014.11-20 (changed items highlighted)**

- construction prerequisites added
- construction approval and inspection policies for initial and final acceptance of the works added