

**1. BUILDING BETTER SMARTER SUBURBS- INFRASTRUCTURE STANDARDS  
REVIEW UPDATE REPORT**

**BÂTIR DES BANLIEUES MEILLEURES ET PLUS INTELLIGENTES –  
RAPPORT DE MISE À JOUR DE L'EXAMEN DES NORMES  
D'INFRASTRUCTURE**

**COMMITTEE RECOMMENDATION**

**That Council receive this report for information.**

**RECOMMANDATION DU COMITÉ**

**Que le Conseil prenne connaissance de ce rapport.**

**DOCUMENTATION / DOCUMENTATION**

1. Special Advisor to the General Manager's report, Planning, Infrastructure and Economic Development Department dated 10 April 2017 (ACS2017-PIE-PS-0069)

Rapport du Conseiller spécial du directeur général, Services de la planification, de l'infrastructure et du développement économique daté le 10 avril 2017 (ACS2017-PIE-PS-0069)

2. Extract of draft Minutes, Planning Committee, 9 May 2017

Extrait de l'ébauche du procès-verbal, Comité de l'urbanisme, le 9 mai 2017

**Report to  
Rapport au:**

**Planning Committee / Comité de l'urbanisme  
May 9, 2017 / 9 mai 2017**

**and Council / et au Conseil  
May 24, 2017 / 24 mai 2017**

**Submitted on April 10, 2017  
Soumis le 10 avril 2017**

**Submitted by  
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**Ward: CITY WIDE / À L'ÉCHELLE DE LA VILLE      File Number: ACS2017-PIE-PS-0069**

**SUBJECT: Building Better Smarter Suburbs- Infrastructure Standards Review  
Update Report**

**OBJET: Bâtir des banlieues meilleures et plus intelligentes – Rapport de mise  
à jour de l'examen des normes d'infrastructure**

**REPORT RECOMMENDATION**

**That Planning Committee recommend Council receive this report for information.**

## **RECOMMANDATION DU RAPPORT**

**Que le Comité de l'urbanisme recommande au Conseil de prendre connaissance de ce rapport.**

### **BACKGROUND**

Building Better and Smarter Suburbs (BBSS) was launched in the fall of 2013 to examine design challenges and opportunities associated with new greenfield development. The focus of the initiative is on improving land efficiency, affordability and liveability in new suburbs within the current urban boundary.

In 2015, as part of the outcome of the Ontario Municipal Board hearing on appeals to Development Charges (DC) By-laws 2014-229 and 2014-328, under the terms of the settlement with the Greater Ottawa Home Builders Association (GOHBA) and the Building Owners and Managers Association (BOMA), the City agreed to move forward with a review of the City's infrastructure standards in new suburban communities. The working premise was not only that anticipated increases in the development charge resulting from an increased Public Transit component could be offset by reductions resulting from the review in addition the City would benefit from lower construction costs and avoid long-term maintenance cost increases.

Infrastructure Standards Review (ISR), a 2015-2018 Term of Council Strategic Initiative, was launched to align and complement the BBSS project. Councillors Jan Harder and Allan Hubley served as Councillor Sponsors and helped guide the two initiatives as well as the Development Charges By-law amendment. The focus of the ISR is to confirm established levels of service, then review and implement infrastructure standards that achieve lifecycle economies in construction, maintenance and/or replacement costs for the City while ensuring the ongoing protection of public health and safety.

The joint BBSS-ISR initiative is linked to the DC By-law Review 2017. The DC By-law is proposed to be amended in 2017 to account for an increase in charges collected from development to support transit investment. Offsetting this are the anticipated savings realized by the ISR initiative.

BBSS-ISR is a truly strategic initiative in that the results achieved will accrue multiple benefits to the City over time. Neighbourhoods will see the benefits of a more liveable design; appropriate parking standards will be achieved; trees will be seen where, in the past, soil conditions did not allow them; roads will be constructed with traffic calming measures in place; and ready access will be available by foot, cycle or automobile to parks, schools, and commercial areas.

Not only will the “surface” of the neighbourhoods yield benefits, but the “sub-surface” will be designed differently to see long-term life-cycle and maintenance cost savings without sacrificing strong standards. The most significant areas of saving are in the design of arterial roads and residential streets, and in stormwater management system design.

## **DISCUSSION**

On May 28, 2014, Council approved the [Vision and Principles for the Building Better and Smarter Suburbs Study](#), which established the high-level direction for this study in order to guide the work of all City departments involved in its related initiatives. This followed approximately one year of background study, consultations, workshops, and technical working group meetings.

In recent years, the City has seen increasingly compact forms of development. While this may be typified by better known urban development like new condominium apartment buildings downtown, near rapid transit stations and along Traditional Mainstreets, the suburbs have also moved in lockstep, seeing residential densities increase by 70 per cent in less than 15 years. This increase in suburban density has supported Official Plan goals of diversification of housing types, housing affordability, and increasing mode share of public transit use.

However, these new compact communities have not appeared without growing pains. As land is used more productively, spatial conflicts have arisen between utilities, trees, sidewalks, parking, snow storage and suburban design challenges have been created. The City also has seen increased budgetary pressures on operating services as a result of conventional design standards.

In March of 2015, Planning Committee received a follow-up report entitled “[Building Better and Smarter Suburbs: Strategic Directions and Action Plan](#),” which outlined challenges and recommended actions. Three working groups - Streets, Parks, and Schools - were established to assist with the implementation of the BBSS Action Plan. Each working group had been assigned specific action plan items for completion during the 2015-2018 Term of Council.

Under the terms of the DC By-law 2014-229 settlement with GOHBA and BOMA, the City agreed to move forward with a review of the City infrastructure standards. The working principle was that the increases in the development charges resulting from an increased transit charge could be offset by reductions elsewhere as a result of the standards review.

The two initiatives were integrated as BBSS-ISR in the fall of 2015 in order to capitalize on overlapping priorities and reduce duplication of efforts across departments with some

immediate efficiencies and synergies. What would have been seven working groups became four working groups with coordination through one multi-departmental Steering Committee. Matters related primarily to planning and urban design were placed under the BBSS Working Group, while matters concerned mostly with infrastructure efficiencies were placed under three ISR Working Groups: Roads and Services, Stormwater Management, and Drinking Water and Wastewater. Each Working Group was chaired by a Manager or Director and included representatives from the Development Industry, municipal engineer consultants, and staff representing multiple City departments.

The coordination of the two initiatives offered an opportunity to better refine and refocus the project objectives, outlined as follows:

- Improved land efficiency, achieving higher development yields on lands within the urban boundary;
- Improved urban design and safety;
- Delivery of infrastructure in more cost-effective ways; and
- Establishment of appropriate levels of service and infrastructure standards that achieve lifecycle economies in construction, maintenance and/or replacement costs.

As a result, this joint initiative was better able to advance the implementation of provincial and City policies around compact, liveable communities, while at the same time finding efficiencies that reduce City infrastructure construction, maintenance and replacement costs.

### **BBSS-ISR Updates**

The BBSS Working Group has made significant progress in implementing the Strategic Directions and Action Plan items identified in the 2015 report to Planning Committee. The following summarizes the progress and status of BBSS initiatives:

- **BBSS/ISR Directions in Community Design Plans (CDPs)**

Riverside South and Kanata North CDPs have embedded language that allows for BBSS vision and direction principles, along with the flexibility to implement BBSS recommendations. There are continuing efforts to ensure these concepts are ingrained in the on-going Mer Bleue and Barrhaven South CDPs.

- **OC Transpo at Pre-Consultations**

By way of a change in procedures, OC Transpo is now invited to all pre-consultation meetings for new plans of subdivision. This has already lead to

improved planning for future bus routes and bus stop and station locations in new subdivisions.

- **Trees in Clay Soils**

A multi-departmental initiative lead by GOHBA and leading geotechnical engineering consulting firms aims to improve tree planting in new subdivisions with sensitive marine clay soils. This is an important win for the City, development industry, and future homeowners that will result in more and larger trees planted in the right-of-way.

- **Suburban Densities Analysis**

The results support current densities, but point to the need for specific improvements to urban design and dwelling unit mix in order to address livability concerns including parking conflicts. Discussions with the development industry are ongoing.

- **Traffic Calming in new Plans of Subdivisions**

New plans of subdivision now are incorporating traffic calming into the initial design and construction of new streets and street networks in greenfield communities. A more formal process is developed in the forthcoming Street Design Manual, expected to be complete in fall 2017. These changes are expected to result in reduced speeding, improved safety, and reduced costs to the City by avoiding retroactive traffic calming interventions.

- **Urban Design Guidelines for Greenfield Neighbourhoods**

An update to the current Guidelines is in progress, and the result will be a more comprehensive and practical document. It will implement numerous BBSS Action Items, including direction related to street network design, block sizes, land uses, on-street parking, active transportation, school sites, and the multi-purposing of key community features. Completion is targeted for early 2018.

- **Park and Pathway Development Manual**

To supplement the Park and Pathway Development Manual, exploration is underway on new park typologies (i.e. woodland parks, urban parkettes, and potentially others). This change is expected to improve tree retention in new parks and provide the option of introducing new, smaller parks in strategic locations to support walkability and aging populations.

- **School Sites**

Discussions continue with the four school boards with the aim to:

- Co-locate schools and parks to promote infrastructure sharing and land efficiency;
- Lay groundwork to ensure long term school viability; and
- Promote active transportation and safety.

Current efforts are focussed on developing individual Memoranda of Understanding, urban design guidelines related to school sites, and a Zoning By-law amendment that improves school site design flexibility, which is expected to go to Planning Committee in fall 2017.

### **Infrastructure Standards Review**

The ISR Working Groups initiated a review of a wide spectrum of infrastructure classes, namely, stormwater management, drinking water, wastewater, roads and utilities. Over 65 infrastructure standard candidates were considered.

In order to provide a consistent review, the teams employed techniques refined through the City's Comprehensive Asset Management (CAM) Program. The outcome of the systematic approach translates to decisions that maximize benefits, reduce risks, and reduce costs while continuing to provide safe and reliable levels of service to community users in a socially, culturally, environmental and economically conscious manner.

In keeping with the BBSS-ISR project objectives the Working Groups focused on cost reduction and/or savings related to infrastructure projects with development charge implications, as well as those that target lifecycle costs. In addition to these infrastructure economies, the City and the Development Industry concur that good urban design supported by "right sized" infrastructure can improve the yield of greenfield development thereby ensuring suburban growth becomes more land efficient with the benefit of delaying increased pressure on the urban boundary.

The volume of infrastructure standards to be reviewed and the timelines by which the reviews were to be completed, dictated that a "value" process be implemented to assess and prioritize the teams workplan. Although all cost savings were important and were included, the following are some of the more significant areas of saving:

- Arterial design
  - Reduced land requirement
  - Improve cyclist safety

- Reduced construction cost
- Stormwater Management System design
  - Increase to ponding on roadway and elimination of Dry Ponds
  - Refined infrastructure design – reduced construction cost
- Daily Water Demand Standard
  - Reduced size of wastewater infrastructure
- Waste Water Pump Station design
  - Refined design standards – cost savings
- Residential Street design
  - Four party utility trench
  - Utilities under sidewalk (if necessary)
  - Trees in right-of-way

Document 1 summarizes the infrastructure standards revised and the estimated savings for both lifecycle and development charge costs. The analysis is reported on a cost savings per unit (door) basis, as is the industry practice. The total estimated cost saving realized to date through the ISR initiative is in the range of \$1,837 per unit.

In regards to yield, this metric used to measure land efficiency is summarized in Document 2. It is estimated that the proposed revisions through the ISR will realize a 2 per cent increase in “yield,” or developable land. The BBSS Working Group will continue to focus on the ongoing improvement of this metric.

The review of arterial rights-of-way is an example of the type of analysis and success realized. The review teams found a solution that simultaneously improves safety, reduces construction and lifecycle costs, and improves yield. This win-win was achieved by determining that the most cost-effective and safest design for accommodating pedestrians and cyclists on arterial roads in growth areas is to re-locate cycling infrastructure from the roadway (on-street bicycle lane) to the boulevard (cycle tracks at sidewalk level). This is attributed to of infrastructure efficiencies from the difference in roadbed and pavement structure required for cycle tracks compared to traditional on-road bike lanes that are designed to the same specifications as the roadway (which accommodates much heavier vehicles). Another efficiency was to eliminate centre medians in residential communities where design speeds are moderate (70 km/hr or less), thereby reducing both land requirements and construction costs.



The ISR Working Group concluded that relocating the bike lane from the roadway to the boulevard would generate \$41.7 per metre cost saving, while the eliminated medians generated a cost savings of \$275 per metre, with no increase in operating costs. Applying the two cost reductions to planned arterial roads in the Transportation Master Plan results in a cost savings of \$12.1 M, which is reflected in the Development Charges By-law Amendment 2017 report.

Given the aggressive timelines and scope of the review, the above results are significant and should be celebrated. Feedback from all participants has been positive on both the process and the subsequent results. This success is attributed to the inclusiveness of the process and to having nurtured a working climate of healthy challenges to our standards and collaborative attitudes to map out common ground in finding reasonable solutions.

### **RURAL IMPLICATIONS**

There are no rural implications associated with this report.

### **CONSULTATION**

The BBSS – ISR Review study was supported by Technical Working Groups, with representation from all departments impacted by suburban development, as well as school boards, utility companies, and the development and consultant industry. Joint BBSS-ISR Working Group meetings were held on a on-going basis since September 2015.

### **COMMENTS BY THE WARD COUNCILLORS**

This is a city-wide report – not applicable.

### **LEGAL IMPLICATIONS**

There are no legal impediments to receiving this report.

### **RISK MANAGEMENT IMPLICATIONS**

Service levels have not been changed as a result of information contained in this report. Any service level changes will be the subject of future reports.

### **ASSET MANAGEMENT IMPLICATIONS**

The information documented in this report is consistent with the City's Comprehensive Asset Management (CAM) Program ([City of Ottawa Comprehensive Asset Management Program](#)) objectives. Amendments to the development charge bylaw for City's infrastructure standards in new suburban communities within the current urban

boundary, assists to fulfil the City's obligation to deliver quality services to the community in a way that balances service levels, risk, and affordability.

Ongoing long term operation, maintenance and capital renewal cost will increase in order to sustain new infrastructure and to support the expected level of service. A whole life view of various standards help to minimizing these costs. As new infrastructure assets are incorporated into the network, the immediate incremental costs and associated pressures are identified as part of annual budget processes. The City continually inspects and assesses asset conditions and completes risk based reviews and renewal programming on that basis. The City regularly updates long-term asset needs forecasts to establish long range financial plan requirements.

### **FINANCIAL IMPLICATIONS**

As outlined in the report.

### **ACCESSIBILITY IMPACTS**

This report promotes complete streets and complete communities and will ensure accessibility issues will be taken into account when developing new road right-of-way cross-sections.

### **ENVIRONMENTAL IMPLICATIONS**

This report promotes development practices that would lead to positive environmental outcomes, land efficiency, such as tree retention and planting, reduced vehicle speeds, liveability and better support for active transportation.

### **TERM OF COUNCIL PRIORITIES**

This report impacts the following Term of Council priorities within the City's 2015-2018 Strategic Plan:

FS1 – Demonstrate sound financial management

EP2 – Support growth of local economy

TM2 – Provide and promote infrastructure to support safe mobility choices

### **SUPPORTING DOCUMENTATION**

Document 1 Infrastructure Standards Revisions

Document 2 Yield

**DISPOSITION**

Planning, Infrastructure and Economic Development Department staff will coordinate the implementation strategies and infrastructure standard protocols. All affected departments and stakeholders will be engaged in the implementation strategies, as necessary.

**Document 1 – Infrastructure Standards Revisions**

<b>Initiatives</b>	<b>Comments</b>	<b>LIFECYCLE SAVINGS (\$/Door)</b>	<b>Development Charge</b>
Revised 16.5m + 18m right-of-way cross-sections	Capital savings to utility companies and time / coordination savings for development industry	\$100	
Arterial and major collector right-of-way review	Estimated \$12.1M reduction in construction costs results in an overall \$6.18M reduction in residential portion of DCs for Roads		DC reduction of \$87 / single dwelling
New stormwater management design standards	Based on Fernbank Abbottsville Crossing - savings \$1,600/Door tender results	\$1,200	
Review of sump pumps in new subdivisions	Agreement to proceed to a "pilot" for detailed review and analysis homeowner.	pilot TBD	TBD
Review water demand and design standards	Revised to reflect actual demand. Estimates of reduced construction cost based on Phase 13 Riverside South	\$150	DC Analysis (IMP- WW)
Wastewater pump station standards	High level of redundancy, reduction in number of overflows and the construction costs being saved.	\$140	
Spacing of maintenance holes	150m from 120m	\$50	
Valve box standards	Estimated savings based on Potter's Key, Stittsville tender results	\$110	
<b>Total per Door</b>		<b>\$1,750</b>	<b>\$87</b>

**Document 2 – Yield**

<b>Initiative</b>	<b>Comments</b>	<b>Result</b>
Arterial and major collector right-of-way review	Relocating cycle track to boulevard, elimination or reduction of medians and 5m total reduction to ROW width	Yield increase 18 units per km
Stormwater - street storage	Increased street storage to eliminate in most cases "Dry Ponds" - Estimate based on Riverside South analysis	2 per cent increase
Stormwater management in parks	In areas where street storage is not sufficient - i.e. topography does not allow for full storage on street	Site specific
Lay-bys in right-of-way at school sites	Potential for addition units from opportunity to re-purpose 5 per cent of land currently used for lay-bys on school site	Site specific