



# **PUBLIC WORKS AND INFRASTRUCTURE COMMITTEE**

**Thursday, May 8, 2014  
4:00 PM**

**Henry Baker Hall, Main Floor, City Hall**



**Private Agenda  
Public Works and Infrastructure Committee  
Thursday, May 8, 2014**

**Approval of Private Agenda**

**Administration Reports**

P14-1            Sale of asphalt mixes and granular/recycled materials to external customers

**Recommendation**

1. Administration bring forward a report on the external sale of asphalt and granular/recycled materials to be presented publicly at the next Public Works and Infrastructure Committee meeting, following discussion with industry stakeholders.

**Adjournment**

CONFIDENTIAL: This report is deemed confidential and may be considered in closed session, pursuant to s. 94(2) of the Cities Act, as it is within one of the exemptions in Part III of *The Local Authority Freedom of Information and Protection of Privacy Act*, in particular: s. 21(a) and (b) being a record which contains information that is subject to solicitor-client privilege and that was prepared by legal counsel for the local authority in relation to a matter involving the provision of advice or other services by legal counsel.

May 8, 2014

To: Members,  
Public Works and Infrastructure Committee

Re: Sale of asphalt mixes and granular/recycled materials to external customers

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### RECOMMENDATION

1. Administration bring forward a report on the external sale of asphalt and granular/recycled materials to be presented publicly at the next Public Works & Infrastructure Committee meeting, following discussion with industry stakeholders.

### CONCLUSION

In 2010, the City hired an external consultant to review the Asphalt Plant and paving operations at the City. The report examined the supply and demand for asphalt and paving operations in the local market, a jurisdictional analysis of paving practise in other cities and an assessment of alternative service delivery options. The report identified that the City of Calgary and the City of Vancouver also own asphalt plants and provide asphalt mixes to their internal paving crews. The City of Calgary also sells asphalt mixes and granular materials to contractors at a price slightly above the market price. The review recommended that the City of Regina maintain ownership of the Asphalt Plant to supply its crews with material and to further consider the supply of asphalt mixes to external customers. The benefits to the City would be a new revenue source and potentially a lower cost of tendered paving jobs (as a result of increased competition). Extending the mandate of the asphalt plant to supply materials to external customers is a change from existing policy that would make the City an option in the local asphalt materials market. However, it is not the City's intention to be an active competitor to other suppliers of asphalt materials, but to address market supply pressures while generating additional revenue to the City. It is recommended that the City supply asphalt mixes slightly about average local prices, so as to not directly compete with the private sector.

The City currently has surplus inventory of recyclable concrete and asphalt which are collected at the Landfill and which could be crushed and offered for sale. This would provide benefit as a source of revenue and also in reducing the space these materials are currently using at the Landfill. To make the product attractive to potential buyers, the price would have to be competitive with similar products supplied by private sector; that price would initially be cost plus 20 percent and adjusted as necessary to balance supply and demand.

The Asphalt Production & Materials Engineering Branch maintains inventory of various materials including cold asphalt mix, street de-icing products and road gravel for use by other Branches. Similar materials are provided to contractors by private sector. Occasionally, these products are not available on the market and the Asphalt Production & Materials Engineering Branch has been approached in the past by contractors to supply small quantities of these materials. Because the City buys these products from local suppliers, the price offered to

contractors would be substantially higher than the market prices of these products. This sale is not expected to be significant, but would provide contractors with additional option if products are not available elsewhere.

The Administration estimates that selling asphalt mixes and granular/recycled materials to external contractors could generate approximately \$50,000 to \$200,000 per year.

## BACKGROUND

In 2010, McNair Business Development Inc. was engaged to evaluate the City's asphalt production and paving operations and compare it to other options available to the City. The three strategic alternatives considered in the McNair review were:

1. Closing the asphalt plant;
2. Maintaining status quo; and
3. Expanding asphalt operation by increasing internal programs and/or by selling asphalt mixes to external contractors and public entities.

McNair's report (Appendix A) concluded that the City's ownership and operation of the asphalt plant is good for the City taxpayers. They also recommended exploring the option of expanding City of Regina operations to include external sales, which would follow the City of Calgary model.

Since 2010, private sector asphalt prices have increased significantly while the City's cost to produce paving products in-house has not. The Administration estimates that the City saved approximately \$4,000,000 over 2011-2013 by producing its own asphalt mixes, which allowed the City to pave more roads.

The Asphalt Production & Materials Engineering Branch has been contacted in the past by contractors interested in purchasing asphalt mixes and other granular materials. Currently, external sale is limited to public entities, with the exception of asphalt planings (small pieces of old asphalt milled from existing pavement prior to placing a new layer of pavement), which are sold to any external companies at a price that provides a balance between supply and demand. The City Administration was also contacted in the past by a developer interested in purchasing from the City road construction services (including materials such as asphalt mixes), which indicates that occasionally there is insufficient capacity within the private sector to supply these services.

## DISCUSSION

Sale of asphalt and other materials to contractors, who do not have their own source of these materials, would allow the construction industry in Regina to grow and meet the local demand for construction services.

### *Determination of prices of the products to be sold*

The Administration recognizes that the City's entry into the asphalt mix and materials market could have an effect on existing business that supply these materials. The City does not intend to directly compete with these businesses (with the exception of the sale of recycled materials) and that will be reflected in the City's pricing approach. At the same time the City's prices should encourage a healthy local market in which prices are competitive and supply and demand are optimal.

### **Asphalt mix prices**

The price for City-produced asphalt mixes for external sale will be adjusted annually and set slightly above the average price charged for similar products by the private sector in the Regina area. The City of Regina will set its price by averaging the market price and adding an additional \$2 per tonne, as to not directly compete with private industry.

### **Recycled materials prices**

The sale of recycled asphalt and concrete is beneficial to the City as it reduces the environmental impact of depositing usable materials at the Landfill. The internal need for these materials is lower than the quantity of the materials available for recycling. Approximately 30,000 tonnes of crushed asphalt and 5,000 tonnes of crushed concrete needs to be sold annually to external customers to utilize all incoming materials. Setting the price above the market value for these products would not allow for sale of the quantities required and therefore it is recommended that the price would be initially set at cost (including Branch overhead) plus 20 percent and adjusted yearly based on supply and demand. This will ensure that raw material inventory (concrete and asphalt slabs and chunks) is not taking more space than is available in designated areas.

### **Prices of materials other than hot asphalt mixes or recycled materials**

Other materials including soils, gravel, salt-sand and other materials readily available to contractors are available from many local distributors at a higher price or directly from crushing/screening contractors at lower price. To avoid competition with the private sector the City would set the price of these products above the market price, but not less than the City's cost to acquire and stockpile these materials. An additional 20 percent would be added to offset overhead costs.

### **Internal prices**

The current process for calculating internal prices for all products provided by the Asphalt Production & Materials Engineering Branch will remain the same as it is now. The prices charged to internal customers (other City branches) are based on the cost of production or purchase, plus a percentage for overhead. The City's primary interest will be to ensure that materials are always available for internal use and that City operated construction work is done in a cost-effective and efficient manner.

### **Impact of external sale on internal operations**

#### **Asphalt mix sale**

The City's asphalt plant has the daily capacity to produce more hot asphalt mixes than is required by internal crews and typically ranges from 10 to 60 percent. With proper planning and coordination, the sale of asphalt mixes would not cause any delays in the supply of these products to internal crews.

Contractors who need to purchase larger quantities of asphalt or specialty mixes would be required to contact the City Asphalt Plant at least one day in advance to determine if and when the mix will be available. The Asphalt Plant will utilize hot mix asphalt storage silos to speed up dispensing of asphalt mixes. If required, the City can manage its internal resources to keep up with the demand.

## **Recycled concrete and asphalt sale**

The City of Regina has been recycling large pieces of asphalt and concrete for over 20 years. Waste concrete and asphalt chunks from building demolition and road reconstruction projects are disposed of at the Landfill by City crews and external contractors and stockpiled separately by Landfill staff. Every three years, contractors are engaged to crush these materials to produce useful road construction and trench backfill materials. These recycled materials are hauled to the City's St. John Street yard.

These materials are then made available to internal customers with small quantities of these materials also being accessible to contractors at the St. John Street yard. Customers seeking larger quantities would be required to pick up these materials from the Landfill and would be required to provide City staff with monthly estimates of materials needed, so that the inventory can be properly managed.

Internal demand for crushed concrete almost equals the supply of this product with approximately 5,000 tonnes per year of this material available for sale to the private sector, without impacting internal needs. The external sale of crushed concrete would be limited to the excess supply only.

The annual quantity of asphalt slabs/chunks that are deposited at the Landfill is approximately 20,000 to 40,000 tonnes in excess of what is needed for internal use. The current inventory of recyclable asphalt at the landfill is estimated at 500,000 tonnes and continues to grow. While the external demand for this product is unknown, there is capacity to expand external sales if necessary.

## **Sale of other materials**

Established practices for the sale of cold asphalt planings will remain in place. The needs of the City will continue to be served first and the excess sold to private sector contractors.

Steel slag will be excluded from external sale as all available slag is used internally. Other granular materials are available from many other sources on a regular basis so the demand for these materials is not expected to change. No impact on internal operation is expected.

### *Mitigation of the risks associated with the sale of asphalt mixes and other products*

The Administration, with advice from the City Solicitors office, will develop sales agreements and administrative and financial provisions to mitigate potential transactional risks. The risks fall within the following broad categories:

1. A potential buyer is unable to pay for the purchased product:  
This risk will be mitigated by screening potential buyers before establishing a credit account. The City uses a similar process for Landfill customers. Contractors not approved for a credit account would be required to prepay before acquiring the material.
2. Performance of the purchased product:  
The sales agreement will include language limiting the City's liability to the cost of the product. The City will continue to maintain a comprehensive quality control program that allows the City to provide good quality and consistent product.

3. Inability to fulfill orders:

The sales agreement will include language that the City cannot be held liable for asphalt plant disruptions or product unavailability that is beyond the City's control.

Expected time for the start of the sale of asphalt and other material.

If City Council approves the recommendation contained in this report, the Administration will begin to prepare the proper financial and administrative protocols outlined above. The Administration anticipates the sale of material could potentially begin as early as the third quarter of 2014.

Next Steps

Following the review with stakeholders the following recommendations will be made in the public report to be presented to the Public Works and Infrastructure Committee:

1. Direct the Administration to supply City produced asphalt mixes, and granular/recycled materials for purchase to external customers;
2. Delegate the authority to establish the prices and sign individual asphalt and granular/recycled materials sale agreements to the Deputy City Manager & COO or his or her designate based on the guiding principals set out in this report;
3. Approve the following guiding principles for the sale of asphalt mixes and granular/recycled materials:
  - a) the price of hot asphalt mixes sold to external customers would be set slightly above average private sector prices;
  - b) the price of recycled materials will be set at the level required to sell the excess inventory of recyclable materials and to balance the annual supply of raw recyclable materials with the demand for crushed (recycled) materials;
  - c) the price of granular materials, other than asphalt mixes or recycled products, will be set slightly above the average retail prices of these materials charged by local distributors, but not less than the City pays to acquire and stockpile these materials (including overhead) built into that price;
  - d) financial risks must be mitigated in association with the sale of asphalt mixes and other products to the external parties; and
  - e) materials will be prioritized for internal City use before supplying to external customers.
4. Instruct the City Solicitor to amend Schedule "E" to *The Regina Administration Bylaw, No. 2003-69* to permit the Deputy City Manager & COO or his or her designate to sign contracts relating to the sale of asphalt or granulated materials; and

## RECOMMENDATION IMPLICATIONS

### Financial Implications

The net profit from the sale of these products, estimated between \$50,000 and \$200,000, could potentially be deposited into a special account that would be used to fund capital projects or other initiatives. In order to facilitate this, modification of the current Asphalt Reserve Policy would be required. The current policy states that any difference between revenue and expenditure of the Asphalt Plant operation must be transferred to the Asphalt Plant Reserve to fund future plant upgrades. The expected revenue will be considered in the 2015 budget process.

### Environmental Implications

The sale of recycled asphalt and concrete would reduce the use of natural materials, thus reducing depletion of gravel pits and reducing the hauling distance from 100km to 10km thereby reducing harmful emissions. Further, using materials that have previously been deposited at the Landfill extends its lifespan and reduces its environmental footprint.

### Policy and/or Strategic Implications

The economic growth experienced by the City continues to put significant pressure on City services and the financial and internal capacity to meet the expectations of citizens. Addressing the challenge within the existing fiscal realities of the City requires Council and residents to make strategic choices, and ultimately trade-offs, that may result in service level reductions if there is insufficient revenue. The recommendation in this report will generate additional revenue for the City that can be directed to address the priorities of Council and residents without increasing property taxes.

### Other Implications

21(a)&(b), 16(1)(a), 16(1)(c), 16(1)(e), 17(1)(d)&(e), 17(1)(f)

21(a)&(b), 16(1)(a), 16(1)(c), 16(1)(e), 17(1)(d)&(e), 17(1)(f)

Accessibility Implications

There is no accessibility implications associated with this report.

COMMUNICATIONS

After the recommendation of this report is accepted, the Administration will invite the stakeholders (materials suppliers, asphalt mix producers, paving contractors and land developers) to attend the meetings during which they would have the opportunity to express their concerns and provide feedback. The summary of the concerns and feedback coming from the industry, along with potential solutions to mitigate the concerns, will be addressed and will be provided to members of the Public Works and Infrastructure Committee prior to the public meeting of Public Works and Infrastructure Committee at which this report would be considered. The stakeholders' feedback will be used by the Administration to establish City's annual price structure. After the proposed guiding principles are approved, the current price list and instructions to potential buyers of asphalt mixes and granular/recycled materials will be posted on the City's Web Site. It will be also communicated to construction associations and all paving contractors.

DELEGATED AUTHORITY

The Public Works and Infrastructure Committee has the authority to accept, modify or reject the recommendations contained in this report and if accepted forward the report to public meeting of Public Works and Infrastructure Committee.

Respectfully submitted,



Adam Homes, Director  
Roadways and Transportation Services

Respectfully submitted,



Neil Vandendort, A/Executive Director  
City Operations

Report prepared by: Les Malawski, Manager, Asphalt Production and Materials Engineering

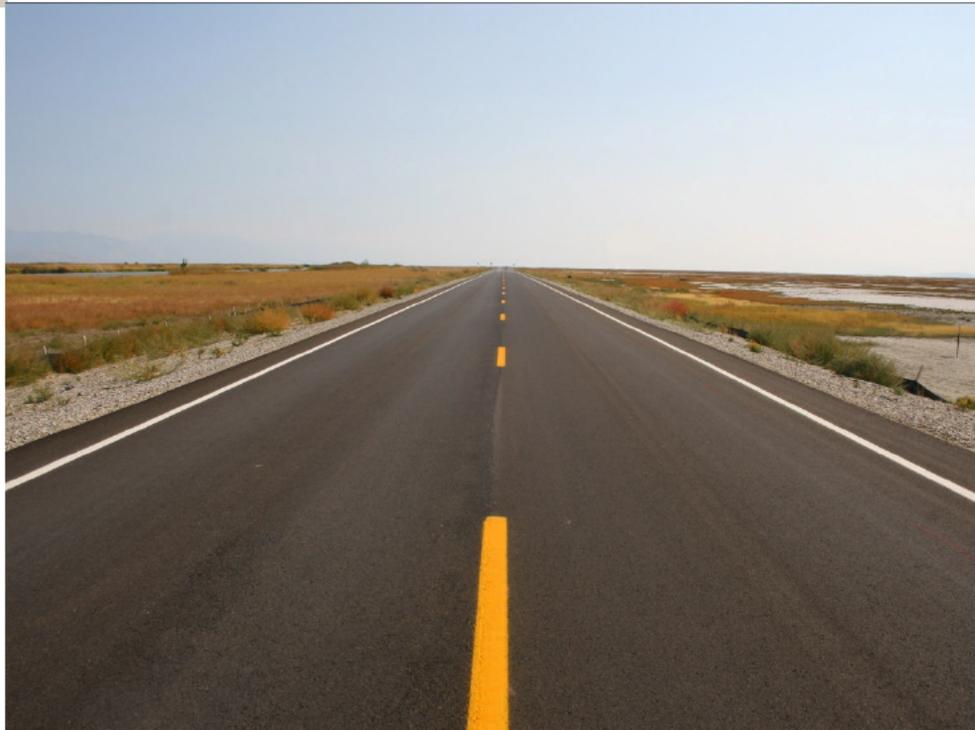
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# City of Regina Asphalt Review Interim Report

Prepared by:

McNair Business Development



**Business and**

**Management Consulting**

**for Projects**

**that Matter**

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## 1. Background

The City of Regina is one of only three municipalities in Western Canada, along with Vancouver and Calgary, that operates its own asphalt mixing plant. The City of Regina's plant only supplies City of Regina crews and currently operates at between 60% - 70% of capacity. This report is intended to evaluate the City of Regina operations by:

- Conducting a peer review to find out how other municipalities approach asphalt mixing and paving
- Conducting a market assessment to determine the competitive market in Regina and to analyze supply and demand levels in the region
- Evaluate the impact of various scenarios involving asphalt operations including increasing production to service internal crews, increasing production to service external customers, or closing the asphalt mixing operation and selling off assets.

If the City of Regina decides to modify their asphalt operations it will have an impact on a variety of stakeholders. Stakeholders that will be affected by a change include City of Regina staff, private companies in the asphalt business, asphalt mixing and paving customers and Regina taxpayers. The report will identify how changes to asphalt operations will affect each stakeholder group, which are likely to include divergent positive and negative effects between stakeholders.

This report represents Phase I of the total asphalt review project and recommendations from the report will lead into further work to be conducted during Phase II.

## 2. Existing Market

### City of Regina Operations

Discussions with City of Regina staff provided insights into existing City of Regina operations, which is a key aspect of the existing market in Regina. Here are some of the highlights of the City of Regina operation:

- Production season: End of Apr. to 1<sup>st</sup> week in Nov.
- 110 days of production
- Generally operates at 60%-70% of capacity
- External factors affect demand including weather, budget and waiting on concrete crews (impacted by weather)
- Production over the past 5 years has been:
  - 2006: 79,196 tonnes
  - 2007: 75,687 tonnes
  - 2008: 78,643 tonnes
  - 2009: 68,458 tonnes
  - 2010 (end of Oct.): 65,000 tonnes

### 2010 City of Regina Asphalt Plant Projected Cost Components (based on predicted sale of 67,100 tonnes)

Component	2010 Projected Cost	% of Total Cost	\$/tonne
Liquid asphalt	\$2,540,000	47.4%	\$37.85
Aggregates (rock, sand, cr. dust)	\$1,803,000	33.6%	\$26.87
Salary and benefits	\$366,200	6.8%	\$5.46
Natural gas	\$123,000	2.3%	\$1.83
Electricity	\$70,000	1.3%	\$1.04
Equipment	\$81,000	1.5%	\$1.21
Fuel	\$21,000	0.4%	\$0.31
Plant repairs and future upgrades	\$335,500	6.3%	\$5.00
Manufacturer's tax	\$23,000	0.4%	\$0.34
Total	\$5,362,700	100.0%	\$79.92

*Source: City of Regina*

The following table provides a comparison between the costs of asphalt from external suppliers against the internal cost of asphalt for the City of Regina:

City of Regina Asphalt Costs from External Suppliers (\$/tonne) <sup>1</sup>						
Purpose	Associated Costs	2006	2007	2008	2009	2010
Infrastructure Renewal Packages (tendered out)	Cost of asphalt mix plus paving	\$74.00	\$88.00	\$111.00	\$114.00	\$126.00
Backup supply of 10K N aggregate asphalt mix from low bid	Cost of asphalt mix only	\$51.36	\$68.36	\$70.67	\$80.33	\$89.46
Backup Supply of 10K N aggregate asphalt mix from second bidder	Cost of asphalt mix only	\$49.60	n/a	n/a	\$84.00	\$101.33
Backup supply of 10K N slag mix	Cost of asphalt mix only	n/a	\$82.74	n/a	n/a	n/a
Paving	Cost of paving only	\$24.40	\$19.65	\$40.34	\$33.68	\$24.68
City of Regina Costs from Internal Operations (\$/tonne) <sup>2</sup>						
Cost of asphalt mix plus paving		n/a	\$82.20	\$101.78	\$98.64	n/a
Cost of 10,000N aggregate asphalt mix		\$49.60	\$63.20	\$68.15	\$72.88	\$79.77 <sup>3</sup>
Cost of 10,000N slag asphalt mix <sup>4</sup>		\$51.39	\$61.83	\$67.86	\$70.70	n/a
Cost of paving only		n/a	\$20.37	\$33.92	\$27.94	n/a
Difference between External and Internal Costs (\$/tonne)						
Cost of asphalt mix plus paving		n/a	\$5.80	\$9.22	\$15.36	n/a
Cost of 10,000N aggregate asphalt mix		\$1.76	\$5.16	\$2.52	\$7.45	\$9.69
Cost of 10,000N slag asphalt mix		n/a	\$20.91	n/a	n/a	n/a
Cost of paving only		n/a	-\$0.72	\$6.42	\$5.74	n/a

Source: *City of Regina Asphalt Operations*

<sup>1</sup>External suppliers price is the price City pays on backup supply contracts. The price includes PST and represents weighed average of weekday (90%) and weekend (10%) price.

<sup>2</sup>Internal cost includes portion of PST that the City of Regina pays (City of Regina does not pay PST on granular materials).

<sup>3</sup>Internal cost for 2010 is a weighted average of two 10,000 N mixes (mix 4- 65% and mix 6-35%).

<sup>4</sup>Cost of slag mixes and paving with slag mixes (both internal and external) is shown as actual price multiplied by weight factor (1.16) to take into account that slag mix is 16 % heavier so more of it is required to cover the same surface relative to natural aggregate mix.

## Existing Private Sector Environment

The private sector environment for asphalt mixing services includes two primary competitors and one smaller operation. The primary competitors are ASL Paving Ltd. and Pasqua Paving, the latter of which is a division of WF Botkin Construction Ltd. The third company competing in the market is Site Management Services Regina Inc that operates a small mobile plant for their own paving jobs. We collected data from the City of Regina to get a sense of the size and scope

of private sector operations in the region. These numbers should be considered speculative and were based on what City of Regina asphalt plant staff had heard from colleagues and partners:

Factor	City of Regina	ASL Paving	Pasqua Paving	Site Management
Annual Volume	72,000 tonnes	80,000 tonnes	80,000 tonnes	45,000 tonnes
Type of plant	Batch	Batch	Continuous	Continuous

Discussions with City of Regina officials indicate that ASL and Pasqua are the only companies that bid on the annual City paving tender and that their annual bids generally are not close. This lack of competitiveness indicates that the second bidder always has sufficient private sector work. Site management is a company that is growing its asphalt paving operations, but does not have the same asphalt plant capacity to take on larger projects relative to ASL and Pasqua.

### Potential for Market Entrants

Over the past 18 months, a company out of Toronto called TBS Paving Inc. was investigating the potential to open operations in Regina or Saskatoon. TBS would be a paving company exclusively and would need asphalt supply for private suppliers. TBS did a two-day site tour with staff from the Regina Regional Opportunities Commission (RROC) during 2009 to evaluate potential in Regina. TBS met with contractors, developers, government officials and the two major asphalt supply companies. They were excited about the potential for growth in the region and about the eagerness among contractors and developers of seeing new markets entrants in the Regina region. However, TBS elected not to pursue opportunities in Regina after discussions with Regina's asphalt supply companies.

TBS Paving officials described the Regina asphalt supply market as protectionist and indicated that the private firms went just short of telling TBS they would refuse to supply them. TBS indicated that they would be required to provide cash up front on all contracts and be given no credit or terms. TBS indicated this practice was unfeasible in the asphalt industry since paving companies needed to receive payment from clients prior to paying suppliers. TBS ended up temporarily opening operations in Saskatoon where they successfully got one supplier to agree to provide them since materials. However, other suppliers were not open to partnering and the firm returned to Ontario as they did not want to be at the mercy of one supplier. TBS indicated that concrete supply was not an issue, but that the asphalt market was closed to new entrants.

### 3. Peer Review

In an effort to benchmark City of Regina asphalt strategy and performance, we conducted a peer review of seven other jurisdictions in western Canada. We identified a board range of cities that include those with existing public plants, those that used to have public operations, and other Saskatchewan cities. We requested costing and pricing data from the peer group, as well as their general thoughts on their market.

#### Cost Comparison

We requested pricing data from each peer review market detailing their cost of asphalt, cost of paving and combined cost between 2006 and 2010 (view Appendix I). Some jurisdictions were able to provide us all necessary data, while others did not have exact data for each year or each function. Overall we found that Regina operations compare favourably with other cities in Western Canada. All three jurisdictions that have a public plant have similar internal asphalt costs and the cost is less than in jurisdictions without a public plant. The exception is Winnipeg that has very low asphalt costs and very high paving costs, which is likely due to a different way of valuing the services.

Comparing cost data between different jurisdictions provided good insights into relative cost levels, but there are some data challenges to note. Each city uses a different asphalt mix that is composed of varying levels of liquid asphalt and various aggregate materials. Depending on the location of those inputs, some cities also have a transportation cost component included in their costs. Cities also use mixes of varying quality and stability. Furthermore, there are different cost elements associated with new construction relative to improving existing infrastructure. Our comparison in Appendix I used the most comparable asphalt mixes from raw data provided by the various municipal contacts but there will certainly be differences in the quality and stability of the mixes used.

#### Individual Findings

Below is a summary of compelling findings from each peer review market.

##### 1. Vancouver

Vancouver has a City owned plant with an annual volume of around 100,000 tonnes. They sell roughly 1-2% of their total production in the private market to municipalities and the University. Vancouver evaluated their options roughly ten years ago when their plant had reached end of life. There was a strong private sector lobby for Vancouver to close their plant, but they opted to continue public asphalt operations.

- Vancouver plant operates on a cost recovery basis.
- Estimated cost per tonne of supporting services is less than \$1 per tonne.

- Annual production of the facility is roughly 100,000 tonnes per year.
- Plant operates year-round excluding a three week break for maintenance in February.
- 1-2% of total production is sold to the external market. External market customers are local municipalities and the University; and, sales are made through basic internal purchase orders.
- Vancouver contracts out asphalt mixing and paving services under two scenarios:
  - i. When it's required (i.e. Federal Stimulus Fund)
  - ii. Local roads contracts – Vancouver has a local roads program whereby neighbourhoods can get local roads improved if they can gather enough petition signatures in the community. The petition is taken to a council meeting and residents pay for the services by long-term tax increases. This work is 100% contracted out by the City and accounts for roughly 5%-10% of city production and paving.
- The primary benefits of owning a plant include control of pricing, flexibility (in mix types) and the ability to conduct trials and research.
- The private sector is not supportive of City asphalt operations. Ten years ago Vancouver performed a similar review of asphalt services and private sector competitors actively lobbied council to close operations. The market competitors also simultaneously dropped prices in the year leading up to the decision in an effort to improve the business case to close operations. Vancouver officials indicated that the price drop was “unnatural” and that prices returned to normal after the City announced intentions to maintain operations.

## 2. Calgary

The City of Calgary has a large asphalt plant with annual production between 130,000 and 200,000 tonnes. The Calgary plant sells openly in the private market, but monitors private sector prices and charges a \$2 premium for its product. Roughly 20% of production is sold to the private sector, and private sector companies do roughly 50% of City of Calgary jobs.

- Council policy is full cost recovery for the plant.
- Sell freely in the open market; but, monitor asphalt prices in the city and charge a \$2 premium over private market prices.
- Production varies between 130,000 and 200,000 tonnes annually. 2009 total was 152,000 and 2010 year-to-date is 126,000.
- Batch plant that is opened year-round except when temperatures drop below 20 degrees. Only plant in Calgary that operates year-round
- Plant capacity is 200 tonnes/hour and the plant typically operates at max capacity during paving season (mid-June to mid-October).

- During the winter months, max capacity is 50 tonnes per day for repairs. Use hot asphalt mix in the winter as well.
- In 2009, 30,000 tonnes were sold to the private market (20%), and in 2010 year-to-date it is 25,000 tonnes (roughly 20% again).
- The City of Calgary does about 50% of City work annually with the remaining work tendered out.
- City contracts out work that city crews are not able to do, typically larger or more complicated projects.
- Private crews also have more flexibility to work nights and weekends to get jobs done.
- Four major private competitors and a couple of smaller ones; one of the private asphalt suppliers does not have a paving crew.
- City is conscious not to compete with private crews and typically sticks to surface overlay work to maintain service life of pavement assets.
- City of Calgary researches and tests innovative mixes.
- Benefits to the plant: cost controls, quality, flexibility, new technologies, location and year-round availability.
- Given the large amount of work over the past few years, every market player has been happy. Should things slow down, they may lobby government to shut down operations.
- Production capacity is influenced more by budget than private competitors.

### 3. Winnipeg

The City of Winnipeg used to have a small plant with an annual 20,000 tonnes of annual production that was closed in 1993. The closure of their plant did not have a large impact on the market, although a new private sector competitor has established operations since the closure. Winnipeg asphalt prices are significantly lower than all other regions, although their paving prices are significantly higher.

- Closed their City-owned asphalt operation in 1993; production of the facility averaged 20K tonnes per year.
- The closure was based on a number of factors including the need for a new facility, environmental concerns on the site, and the private sector lobby.
- The number of private firms in the market before the closure was 4. There are currently 5 private firms in the market.
- During operations, the price of asphalt at the City plant was competitive with the private sector until they started adding a surcharge in later years to help finance a new plant purchase.
- The city still has a paving crew that is extremely competitive with the private sector and performs exceptional work.

- The city did not observe any real changes in the market after the closure and attributed the new market entrant to a substantial increase in asphalt demand since the closure.
- The city puts out a supply contract annually and 4 of the 5 private firms have had the contract over the past 15 years.
- After the plant closure, the quality of product diminished slightly.
- Quoted asphalt prices from Winnipeg are much lower than all other regions; however, paving costs are considerably higher and the overall cost is only moderately lower.

#### 4. Weyburn

Weyburn tenders their work annually and usually awards contracts to Regina supplier. Cost of services is quite high in Weyburn relative to other jurisdictions and transportation costs are a part of that. Escalating prices have become a concern for Weyburn.

- Tender annually for City work; suppliers vary with most successful firms coming from Regina with a portable plant (a Winnipeg firm has also won the contract in the past).
- The tenders are for mixing and paving, although the City of Weyburn does have a patching crew.
- There are no asphalt plants in Weyburn, although there is a privately owned plant in Estevan.
- Escalating price is becoming a major concern in Weyburn.
- Supply of gravel is another major problem as firms need to transport gravel to Weyburn, which adds cost.

#### 5. Moose Jaw

Moose Jaw has only had one bidder for their City work over the past ten years, a local company called Cypress Paving. Moose Jaw prices are slightly higher than Regina, but not significantly so.

- Asphalt and paving supplier is 'Cypress Paving', which is the only Moose Jaw-based supplier.
- Cypress Paving has been the lone bidder on City of Moose Jaw tenders for 10 years.
- The City has a small internal crew that does patching work.
- They are happy with the service Cypress provides; and, the only related problem they have had is rutting in the streets over the past four years, which is currently unexplained.

## 6. Saskatoon

The City of Saskatoon may be the most relevant jurisdictional comparison based on the broad similarities it shares with Regina. Costs for the City of Saskatoon are higher than external costs for the City of Regina and significantly higher than costs associated with internal City of Regina operation.

- The City of Saskatoon paid \$131/tonne for asphalt and paving services in 2009; City of Regina costs for 2009 were \$98.64/tonne internally and \$114/tonne externally.
- The City of Saskatoon uses a variety of mixes with stabilities ranging from 6K Newtons/tonne up to 14K.
- Saskatoon contracts out work to three suppliers, including ASL Paving that also operates in Regina.
- The City of Saskatoon had a plant that was decommissioned in 1992. The City of Saskatoon ran a one year trial prior to decommissioning the plant by closing the plant for a year and seeing how the market would react. The market maintained prices during that year. After the plant was decommissioned a year later, prices began to rise slowly.
- The City of Saskatoon mentioned that recent cost escalations have made funding appropriate programs difficult.

## 4. Regina Outlook

After decades of relative stagnant population and economic growth, Regina has experienced a relative boom in population and economic development over the past five years. Discussions with City of Regina Planning staff indicate that recent Regina growth patterns likely represent a sustainable projection going forward. The City of Regina commissioned a population report that was completed in June 2010, which included population projections to the year 2035 that detailed high, medium, and low growth scenarios for the city. The medium growth scenario most accurately reflects current population estimates and would see the population of Regina growth by nearly 20,000 to 225,513 by 2020. This growth would necessitate 1,100 – 1,500 new dwelling units during that ten year timeframe. Prior to the accelerated growth of the past few years, typical housing builds were 600 units per year.

City Planning officials indicate that every 2,500 new residents to Regina brings about roughly 80 hectares worth of development along with them. Roughly 20% of that growth is realized through infill development of existing neighbourhoods, which do not require the same level of infrastructure requirements as new developments. The current growth scenario for the City of Regina is a plan to 235,000 people, which would represent roughly 36,000 more new residents to Regina. The growth scenario outlines the specific areas that are ear-marked for development and the city estimates that existing development regions will take more than ten years to get to 235,000 people.

City planning officials provide a high level outlook on development in the residential, industrial and commercial sectors. Residential development will remain steady and the focus on high density housing downtown will not slow growth in the periphery. Industrial development tends to come and go, but it appears that there will be a significant boom over the next 5 to 10 years. Once Harbour Landing is completed the City believes that commercial development will slow down considerably, with new developments focused on the fill in areas rather than new developments.

The City planning officials did not have quantitative data specific to asphalt, but did provide us with some high level insights into paving implications of developments. They estimated that residential subdivisions included roughly 20% - 25% hard surface, primarily roadways. They mentioned that although roadways in commercial zones are less pronounced, 65% of a commercial site is typically hard surface, mostly parking lot. They were as sure about the implications for industrial zones, but mentioned trucking related developments (like the Global Transportation Hub) would likely include significant hard surface infrastructure.

Overall the message from City officials is that Regina growth is sustainable and demand for asphalt and paving services will continue to grow in the future.

## 5. Strategic Alternatives

There are three fundamental strategic alternatives that the City of Regina can consider:

- 1) Close Operations
- 2) Maintain Status Quo Operations
- 3) Expand Operations

These three options would impact the City of Regina and other various stakeholder groups in a number of ways. Cost of asphalt mixing and paving services is a primary consideration, but there are other factors that need to be consider when deciding which alternative is the most suitable option. The following evaluation outlines projected outcomes of each alternative and suggests the best course of action.

### Option 1 - Close Operations

Closing operations would create a pure private marketplace for asphalt in the Regina region. It would mean expanded work for the existing three Regina-area competitors and may create an opportunity for a new market entrant. The City of Regina could possibly sell the plant, which would result in some salvage value of the assets. However, we estimate that revenue would be minimal relative to long-term asphalt mix costs.

The long-term cost implications for the City of Regina are an unknown. By closing its operations, the City of Regina would relinquish all price control and would be at the mercy of private sector prices. The most recent comparative data between internal and external costs to the City of Regina is the most effective tool for trying to establish a baseline estimate of cost implications of a closure. The following table assumes City of Regina paving crews would continue to operate as they currently do.

City of Regina - Difference between External Prices and Internal Costs (\$/tonne)					
Type of Cost	2006	2007	2008	2009	2010
Cost of asphalt mix plus paving	n/a	\$5.80	\$9.22	\$15.36	n/a
Cost of 10,000N aggregate asphalt mix	\$1.76	\$5.16	\$2.52	\$7.45	\$9.69
Cost of 10,000N slag asphalt mix	n/a	\$20.91	n/a	n/a	n/a
Cost of paving only	n/a	-\$0.72	\$6.42	\$5.74	n/a
Production Level	79K	76K	79K	68K	65K
Additional cost per year of asphalt mix	\$139,040	\$392,160	\$199,080	\$506,600	\$629,850

The additional cost of purchasing slag mixes would be significantly higher. For 2007, if the City of Regina had purchase slag mixes from the external supplier, at their quoted prices, the additional cost would be \$1,589,160. Using the simple existing cost comparison, the City of Regina would incur significant additional costs by closing operations. A critical unknown in the

estimates is the actual market price that other private customers currently pay as the City of Regina may be paying a premium over market. Nevertheless, lack of any price controls going forward also opens the door for price increases over and above historical levels.

*Recommendation: Based on the existing gap between internal and external costs, coupled with a loss of future price controls, we do not recommend that the City of Regina considers Option 1.*

## **Option 2 – Maintain Status Quo Operations**

Maintaining status quo operations is certainly an option for the City of Regina. The City operations compares favourably with other jurisdictions on cost. Public sector suppliers generally provide a higher quality product and City of Regina officials believe that to be true here as well. Continued expansion and development in Regina should provide at minimum the same level of City of Regina work well into the future. There does not seem to be a visible private sector lobby to shut down operations and the fact that the City of Regina upgrades their existing plant rather than build new at end of life means that the private sector never has an opportunity to lobby against a \$3 - \$5 million dollar capital expenditure.

*Recommendation: Consider maintaining status quo operations a suitable fallback option because the operation compares favourably with other jurisdictions and provides low cost supply that the City can control.*

## **Option 3 – Expand Operations**

The results of discussions with City of Regina officials, public works contacts in other jurisdictions and a prospective paving company provide evidence that the City of Regina should consider expanding operations to supply asphalt to outside parties. The two of public asphalt plants in western Canada both have outside sales as part of their operation, although they use different strategic approaches. The City of Regina is primed for further growth and demand for asphalt services will continue to grow as well. Existing suppliers may be limiting new paving companies from entering the Regina market, which could have a negative impact on growth in the future.

There are two fundamental alternatives that the City of Regina needs to evaluate when considering entering the private market:

- 1) Sell only to specific groups (RMs, Universities, etc.)
- 2) Sell openly to anyone

There are a number of factors that need to be evaluated to determine which option is suitable for Regina. Vancouver and Calgary both make a conscious effort not to compete or upset private market competitors, which the City of Regina also needs to consider. Competing with private business is always a hot topic for government and City of Regina decision-makers need to

determine their appetite for doing so in the asphalt market. It is also worth noting that the City of Regina could expand operations by increasing work by internal crews.

*Recommendation: Explore expanding City of Regina operations to include external sales during Phase II of the asphalt review project.*

## 6. Next Steps

The focus of Phase II of the project will be evaluating the various scenarios for expanding City of Regina operations. We believe there are four scenarios that could justify expanding operations:

- 1) Expand operations to service internal paving crews
- 2) Expand operations to service specific external groups (i.e. RMs)
- 3) Expand operations to service all external groups
- 4) Develop an alternative service delivery model for the City of Regina operation (i.e. Public-private partnership)

Given that expanding operations to service internal crews is largely an internal budget issue, it will not be a focus of Phase II. The other three options will be further evaluated to determine if any are suitable for the City of Regina. In order to determine demand for expanded City services the consultants will need to engage end-use customers to determine appetite for such an expansion. To date the consultants have not engaged local customers in an effort to keep discussions of the project internal during Phase I. There are three options for further engagement during Phase II:

- 1) Engage only public end-users, including towns, RMs, and the Ministry of Highways and Infrastructure.
- 2) Engage public and private end-users including the aforementioned private groups as well as local contractors and developers.
- 3) Engage public and private end-users including existing asphalt competitors.

By engaging the private sector the consultants will be able to get a firm grasp of the private environment and the true appetite for this sector to see expanded City of Regina operations. However, engaging the private sector will also make the initiative public, which could lead to questions or backlash to City officials and/or councillors. Discussions with City officials will determine the best option moving forward.

## Appendix I

### Asphalt and Paving Costs for Cities with Public Plants (\$/tonne)

City	Cost Component	2006	2007	2008	2009	2010
Regina (internal)	Asphalt	\$49.60	\$63.20	\$68.15	\$72.88	\$79.77
	Asphalt and Paving	n/a	\$82.20	\$101.78	\$98.64	n/a
Regina (external)	Asphalt	\$51.36	\$68.36	\$70.67	\$80.33	\$89.46
	Asphalt and Paving	\$74.00	\$88.00	\$111.00	\$114.00	\$126.00
Vancouver (internal)	Asphalt	\$53.00	n/a	n/a	\$72.50	n/a
	Asphalt and Paving	n/a	n/a	n/a	n/a	n/a
Vancouver (external)	Asphalt	\$71.50	n/a	n/a	\$91.50	n/a
	Asphalt and Paving	n/a	n/a	n/a	n/a	n/a
Calgary (internal)	Asphalt	n/a	n/a	n/a	n/a	\$81.80
	Asphalt and Paving	n/a	n/a	n/a	n/a	n/a
Calgary (external)	Asphalt	n/a	n/a	n/a	n/a	n/a
	Asphalt and Paving	n/a	n/a	n/a	n/a	n/a

Source: Various municipal public works contact

Note: Cost of slag mixes and paving with slag mixes (internal) is shown as actual unit cost multiplied by weight factor (1.16 for year 2006-2008 and 1.06 for 2009) to take into account that mixes containing slag are heavier, so more mix is required to cover the same surface as for natural aggregate mix.

### Asphalt and Paving Costs for Cities without Public Plants (\$/tonne)

City	Cost Component	2006	2007	2008	2009	2010
Winnipeg	Asphalt	\$40.00	\$53.00	\$55.00	\$53.00	\$52.77
	Asphalt and Paving	n/a	n/a	n/a	n/a	\$110.00
Weyburn	Asphalt	n/a	n/a	n/a	n/a	n/a
	Asphalt and Paving	\$65.00	\$98.50	\$122.00	\$138.00	\$137.00
Moose Jaw	Asphalt	\$52.15	\$61.54	\$69.92	\$81.86	\$94.96
	Asphalt and Paving	\$70.21	\$78.64	\$90.44	\$109.20	\$121.21
Saskatoon	Asphalt and Paving	\$84.00	\$105.00	n/a	\$131.00	n/a

Source: Various municipal public works contacts

## Asphalt Plant upgrades: 2002 - 2014

Funding source :Asphalt reserve (contributions to the reserve are included in annual cost of asphalt production)

Year	Description	Cost	Benefit
2002	Replacement of three aged, horizontal liquid asphalt storage tanks with two indirectly heated vertical tanks; replacement of underground bare pipes with above ground insulated double wall, hot oil heated pipes and hot oil heater.	\$340,000	Elimination of risk of fire in the tanks; reduction of heating cost; smaller foot print required; elimination of liquid asphalt turning into solids in the pipes
2002	Replacement of corroded underground 4 bin material proportioning system with new 6 bin above ground system	\$230,000	Ability to incorporate up to six different materials in the asphalt mix; easy calibration and cleaning around the bins.
2006	Addition of two silos for storing hot asphalt mixes. Reverse weighing system (weigh cells under the legs of the silos) installed.	\$393,600	Faster loading of trucks (no line ups); higher output (tonnes/hr); no need for truck scale
2009	Replacement of old burner with high efficiency burner and burner controls; Installation of T-flights in the dryer	\$139,500	Lower consumption of natural gas; increased production rate
2009	Replacement of old controls and operating room with new controls installed in custom made new trailer; replacement of wiring system on the plant	\$243,200	Better reliability of the plant; better quality of asphalt; higher production rate; better working environment for the employees
2010	Addition of dust separation and measuring system (measuring the amount of fine and medium dust injected into mix)	\$440,000	More consistent asphalt mix, no more asphalt loads rejected due to too much or not enough dust in the mix; reduction of asphalt content needed in the mix
2014	Rebuilt of the baghouse (new bags, seals, cages and hoses)	\$40,000	Lower risk of leakage of dust into atmosphere

Total

\$1,826,300



# **Sale of Asphalt & Granular/Recycled Materials**

City of Regina



# Products City could sell

City of Regina



- Hot asphalt mixes
- Recycled asphalt and concrete
- Cold mix asphalt and some granular materials



# Benefits

- New revenue (\$50,000-\$200,000/yr)
- Reducing inventory of recyclable asphalt and concrete slabs at the Landfill
- Potential for more contractors bidding on City jobs
- Better use of the capacity of City Asphalt Plant (lower unit cost)



# Hot mix asphalt (HMA)

- **Current source:**

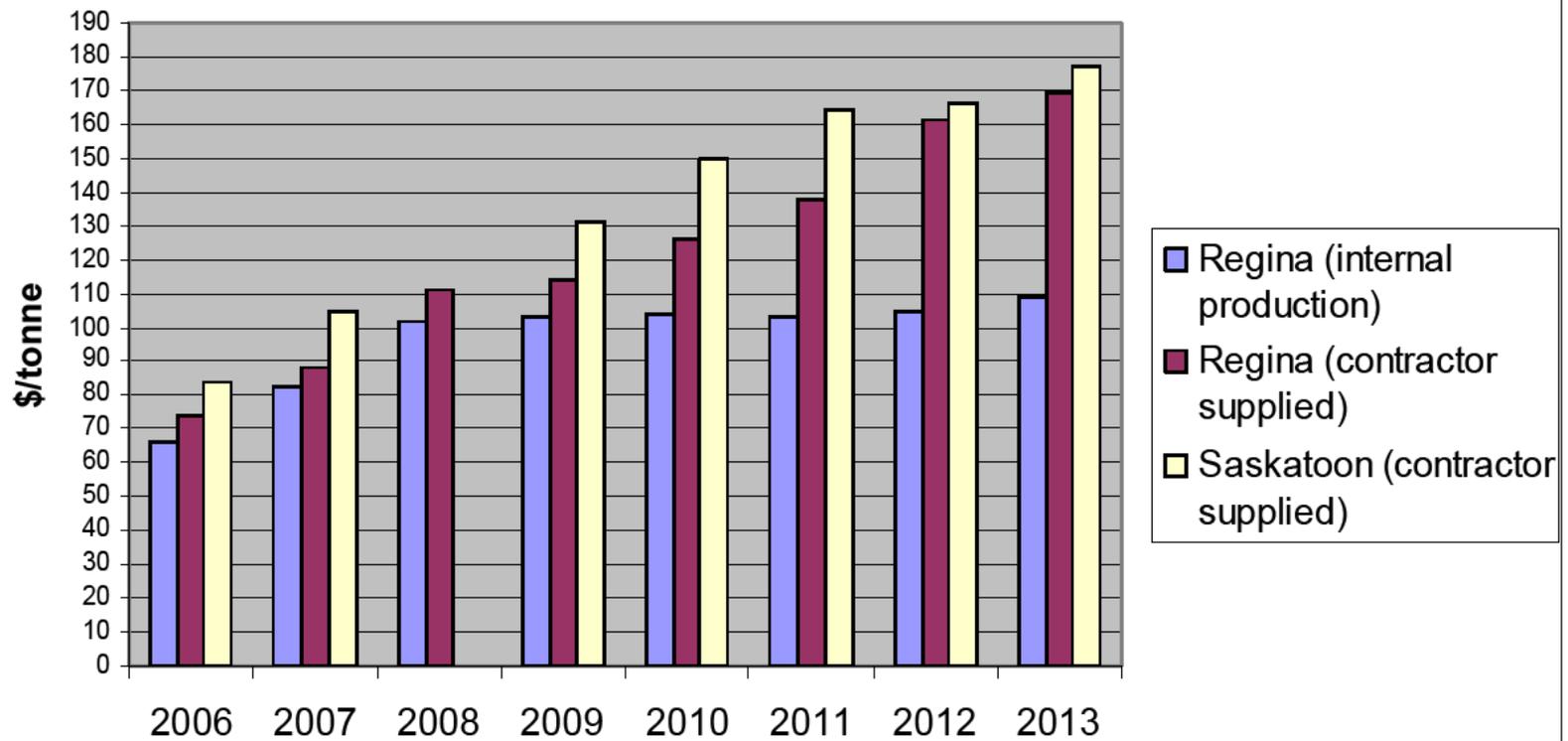
- Two big asphalt plants produce for their own paving crews and sell to others
- One smaller asphalt plant produce only for their own needs (3 new plants may start in 2014)

- **Issues:**

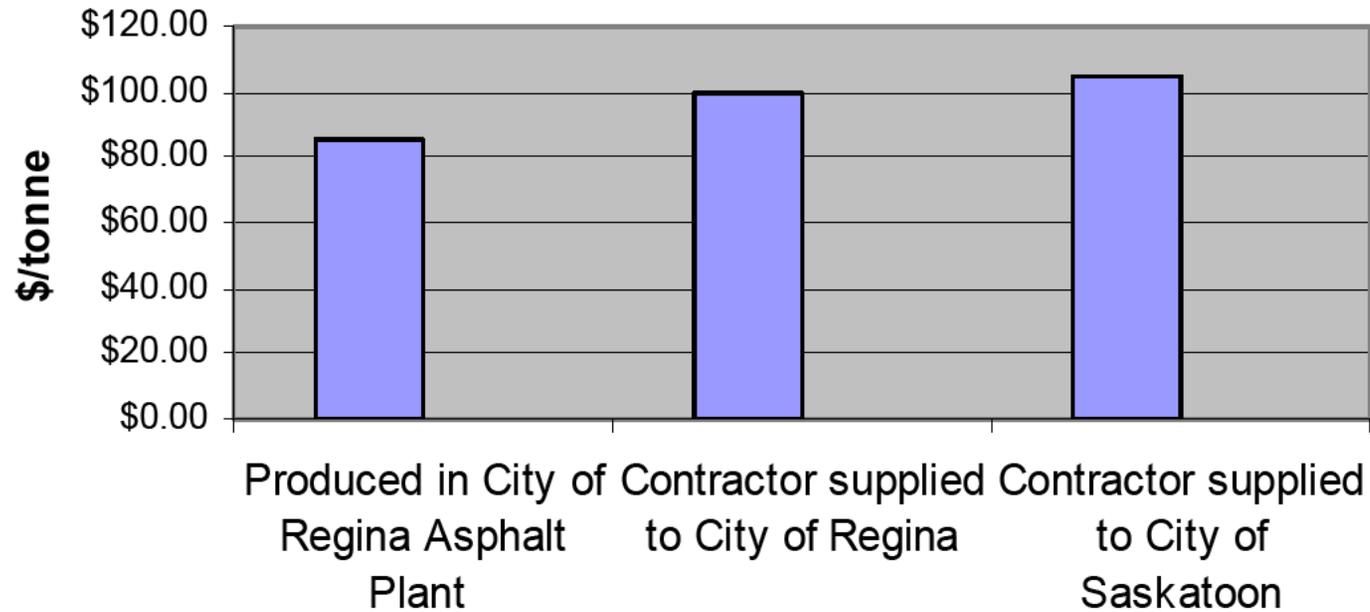
- Paving contractors who do not own an asphalt plant not always have access to HMA



## Cost of asphalt plus paving



### 2014 prices of asphalt mix for paving (adjusted for unit weight differences, PST included)



# 2002 – 2014 asphalt plant upgrades

- Cost – over \$1.8M
- Benefits:
  - reduced operating cost (\$400,000 per year)
  - Improved reliability of the plant
  - Improved consistency of asphalt mix
  - Increased productivity and capacity
  - Better and safer work environment



# Recycled materials

- **Current source:**

- City landfill (concrete and asphalt slabs)
- Local road builders and asphalt producers
- Virgin aggregates as alternative to recycled materials

- **Issues:**

- Fast rate of depletion of gravel pits resulting in longer haul
- Stockpile of recyclable asphalt growing steady at the landfill
- Money invested in stockpiling of raw materials not recovered



# Granular Materials

- **Current source:**
  - Material crushing and screening contractors (whole sale)
  - Landscape material suppliers (retail sale)
- **Issues:**
  - Occasional shortage of some materials (cold mix, sand/salt)



# Potential Negative Impact

City of Regina



- City of Regina:
  - Reputational risk if asphalt sold to dishonest, poorly equipped or unqualified contractor
- Paving contractors who own asphalt plants:
  - Potential for more competition (lower profit)
  - Potential for work shortage for some

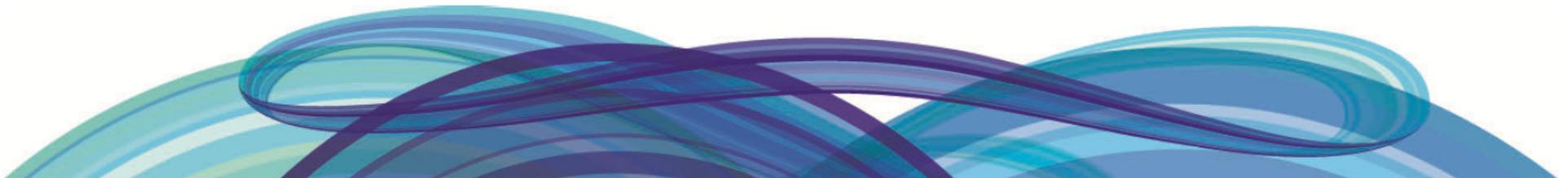


# Potential Positive Impact

City of Regina



- Paving contractors who do not own asphalt plants in Regina area:
  - Would be able to bid on City and land developers projects (no restrictions on materials supply)
  - May have shorter distance of hauling asphalt



# Potential Positive Impact

City of Regina



- Land developers and business owners:
  - Easier access to road/parking lot builders
  - Potentially lower prices (increased competition)
  - Quicker delivery of projects
- Aggregate suppliers
  - Potentially more sale of aggregates to the City
- Regina citizens
  - City will be able to maintain or slightly reduce unit cost (overhead spread over greater volume)



# Next Steps

City of Regina



- Meet with external stakeholders and provide summary of meetings to PW&I Committee
- Establish pricing and schedule
- Create sales agreements and process for acquisition
- Distribute relevant materials to industry partners and potential buyers



# Pricing

Proposed process for establishing price structure:

- Request quotes from supplier to City
- Request pricing from suppliers
- Calculate average
- Add \$2/tonne

