PW14-14

September 11, 2014

To: Members,
Public Works and Infrastructure Committee

Re: Sale of Asphalt Mixes and Granular/Recycled Materials to External Customers

RECOMMENDATION

1. Direct the Administration to supply recycled materials for purchase to external customers and/or public entities;

2. Delegate the authority to establish the prices and sign individual 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;

   a) The price of recycled materials will be set at the level required to generate net revenue and to sell the excess inventory of recyclable materials. The annual supply of raw recyclable materials will be balanced with the demand for crushed (recycled) materials;

   b) The price of various materials sold to public entities will be maintained at cost plus 20%;

   c) Financial risks must be mitigated in association with the sale of products to the external parties; and

   d) Materials will be prioritized for internal City use before supplying to external customers.

3. Direct the Administration to monitor the asphalt supply market over the next year, and if market conditions change significantly, advise City Council as to whether or not there is a need and a benefit for the City to enter this market;

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 granular/recycled materials; and

5. This report be forwarded to City Council for approval.

CONCLUSION

The Administration has reviewed the feasibility of the following new revenue opportunities:

1. Sale of hot mix asphalt;
2. Sale of recycled concrete and recycled asphalt; and
3. Sale of other granular materials.

The asphalt mix supply market has changed significantly over the past few months and the supply-demand gap that City was intended to fill is no longer there. The City's entry into this market (intended to secure competitive prices for the City's contracted out paving projects) is not required at this time, as the industry has become more competitive. Due to a new company in

Regina providing asphalt mixes to all contractors without any restrictions, there is no longer a demand for asphalt mixes being sold at a price above market price. The new funding available for upgrading the road infrastructure in residential areas would provide opportunities for the City to do more in-house paving and to fully utilize the spare capacity of the City-owned asphalt plant.

Offering recycled or recyclable asphalt and concrete for sale to external customers is necessary in order to reduce the inventory of these materials currently stockpiled in the landfill. Offering these materials for sale will also promote the use of recycled materials, adding the added benefit of supporting the Official Community Plan's commitment to environmental sustainability. The sale of recycled materials is expected to generate $50,000 to $100,000 per year in net revenue. The sale of recycled concrete and asphalt is consistent with the current practice of selling cold planings, which also consist of recycled material.

At this time, the demand for granular materials in the Regina area is sufficiently met by the private sector. As a result, the City's sale of these materials to contractors at a price above the market price would not generate any significant revenue. The past practice of supplying these materials to public entities at cost plus 20% should be maintained, as it supports the spirit of cooperation between public entities and allows for the generation of revenue.

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. Selling the City-owned asphalt plant;
2. Maintaining the status quo; and
3. Expanding the 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 a cost effective option. Their recommendation was to either maintain the status quo or explore the option of expanding the City of Regina's operations to include external sales, which would follow the City of Calgary's current 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 between 2011 and 2013 by producing its own asphalt mixes, a method that also allowed the City to pave more roads.

The Administration has been contacted in past years by contractors who were interested in purchasing asphalt mixes and recycled materials due to a lack of supply in the area. In the past, only contractors who owned asphalt plants themselves were able to bid on larger projects contracted out by the City. At this time, existing asphalt plants were not supplying asphalt to their competitors, resulting in limited competition among contractors, and forcing the City to pay higher prices for paving services during the construction boom.

The City Administration was also contacted in the past by a developer interested in purchasing road construction services (including materials such as asphalt mixes). This inquiry indicated that, occasionally, the private sector had an insufficient capacity to supply these services. As the capacity of the City's construction crews was limited, this option was not explored further.

Currently, the external sale of materials 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 external companies at a price that provides a balance between supply and demand. In the past, the City also provided small amounts of sand and/or salt to one local contractor after it was determined that this product was not available in the private sector.

On small scale projects, the City has also provided asphalt mixes to contractors who were hired to place City supplied asphalt at specific project locations.

The revenue generation opportunities from the sale of various materials were presented to the Public Works & Infrastructure Committee on May 8, 2014 at a private session. Following this meeting, feedback from stakeholders was solicited. The purpose of the stakeholders' consultations was to determine if the need for the City's entry into the supply market still existed, and to determine the price structure that would be required in order to mitigate the negative impact on any members of the industry.

DISCUSSION

Sale of hot mix asphalt

The City's initial intention was to sell asphalt mixes at the price of $2/tonne above average market price of similar mixes supplied by local private sector. The objective was to generate revenue and utilize the full capacity of the City's asphalt plant, while also increasing competition on paving work tendered out by the City. The idea of selling asphalt mixes at $2/tonne above the average market price was intended to prevent undercutting the current suppliers of asphalt mixes. At this price, the City expected to provide the mixes to potential buyers only if they are not available to them from other sources.

Based on the information provided by stakeholders, the market prices range from $95/tonne to $120/tonne. Only one supplier sells asphalt mixes at the same price to all buyers. The other two suppliers sell the same asphalt mix at varying prices to contractors. To avoid active competition with the private market, the City's sale prices would have to be at least $120/tonne. At this price, both the quantity of asphalt sold and the potential revenue would be very small and not worth the effort.

We believe that hot mix asphalt supply market shortages no longer exist in the Regina area. The prices paid by the City for paving services dropped from $169/tonne in 2013 to $125/tonne in 2014. It is worth noting that these tenders were awarded based on the total package price for the projects (which included concrete and earth work) so it is possible that the paving prices shown in these tenders may have been different had the paving component been awarded individually. Nevertheless, this sharp drop in paving prices is an indication that the paving industry is more competitive now than it has been in the past.

There are now six asphalt plants currently operating in Regina. One of these plants sells asphalt mixes to other paving contractors without any restrictions. They also provide asphalt mixes to their own crews. Two other plants continue to sell their asphalt mixes to other paving contractors with whom they are not in direct competition. Other plants provide asphalt mixes to their own crews only.

If the City enters the asphalt market at this time, the impact would be felt most heavily by new entrants and especially by the company that sells asphalt mixes to all contractors without any restrictions, as their prices are on the high end of the price range. This could potentially result in a relocation of the plant, affecting the competitiveness of the local market.

The Administration recommends that the City not enter the asphalt mix supply market at this time. The Administration will monitor both future costs for paving services and requests for asphalt from potential customers over the course of the next year. If these market conditions change significantly, then the issue will be revisited and new recommendation will be provided.

The issue of utilizing the spare capacity of asphalt plant will be addressed through an increased volume of internal paving, which will be available as a result of an additional 1% mill rate dedicated for the rehabilitation of residential roads.

Sale of recycled materials

The City has been selling a surplus of cold planings for 20 years. Initially, this material was sold in large quantities: one buyer would purchase the entire supply for the year. The revenue generated using this method was small ($30,000 - $40,000 per year). Over the years, the Administration has employed different options and this material is now sold to 10-20 contractors each year, generating $200,000 - $400,000 in annual revenue. The price is set to balance demand with supply and is typically adjusted yearly. We recommend that the City maintain this practice.

Recyclable slabs of asphalt and concrete are crushed for the City by contractors. This crushed concrete and asphalt is used by internal crews as trenchfill and base material. Approximately 30,000 tonnes of recyclable asphalt slabs and 5,000 tonnes of recyclable concrete is could be sold without affecting internal use. There is currently almost 500,000 tonnes inventory of recyclable asphalt at the City Landfill that could be sold to make a profit and create room for incoming raw material. Setting the price above the market value for these products would not allow for sale of the quantities required. Therefore, it is recommended that the price be initially set at cost plus 20 percent, and adjusted yearly based on supply and demand. The producer and distributor of similar materials does not believe that there is a sufficient market for recycled concrete and recycled asphalt to justify the City's entry into this market. Alternatively, some contractors stated that they would be interested in buying recycled materials if the price is competitive with granular materials produced in the gravel pits by local suppliers. We also believe that the construction of the Regina Bypass, the Stadium and Sewage Treatment Plant may create opportunities to sell large quantities of recycled or recyclable asphalt.

The City could make a request for offers and sell large quantities of uncrushed asphalt chunks to the proponent offering the best price, which would be at or above the minimum price, as listed by the City. The minimum price of $4/tonne would ensure that the City's cost of stockpiling this material was recovered and the net revenue of $2/tonne was made. If this option did not generate the expected result, the City could have a contractor crushing larger quantities of recyclable materials than is required by an internal operation. The City could then sell the surplus materials either as a large lot, or as series of smaller lots. The local supplier of recycled concrete and asphalt expressed their preference for the City to sell larger quantities of these materials, as they could then purchase the material and distribute it to contractors themselves. This option would lower the City's administrative cost for the distribution of this material, but would also reduce the revenue generated by the City. The Administration recommends initially utilizing all options to determine the correct balance between them.

Selling recycled or recyclable asphalt and concrete would ensure that the raw materials inventory (concrete and asphalt slabs and chunks) is not taking more space than is available in designated areas. The sale of these materials would also promote recycling, and the over time would make the recycled concrete and asphalt the products of choice. The City has always been a very strong supporter of recycling and other environmentally friendly initiatives. The new Official Community Plan lists promotion of conservation, stewardship, and environmental sustainability as the priorities of the plan. The sale of recycled materials will support the implementation of this priority.

An additional benefit to the sale of recycled materials is the life extension of gravel pits and their preservation for the production of materials that have no substitute in recyclable products.

Sale of other granular materials

The Asphalt Production & Materials Engineering Branch maintains an inventory of various materials including cold asphalt mix, street de-icing products, base, road gravel and other products for use by City crews. A portion of these materials is also being sold to public entities at cost plus 20%, and is currently generating about $30,000 - $50,000 in net revenue per year.

Similar materials are provided to contractors by the private sector. Sand/salt sold by truck loads is not available in Regina, but is available in Pilot Butte.

The feedback from the local contractors indicates that the granular materials are available from local suppliers on a regular basis. Therefore, these stakeholders have no desire to buy any of these materials from the City at a price above the market value. Based on this feedback, we recommend limiting the sale of granular materials to public entities only.

Impact of external sale on internal operations

The City's primary interest will be to ensure that materials are always available for internal use such that City operated construction work is completed in a cost-effective and efficient manner.

Mitigation of the risks associated with the sale of recycled materials to contractors

The Administration, with advice from the City Solicitors office, will develop sales agreements and administrative and financial provisions in order 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 a good quality and consistent product.

Expected time for the start of the sale of materials

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 that the sale of materials could potentially begin as early as the fourth quarter of 2014.

RECOMMENDATION IMPLICATIONS

Financial Implications

The net profit from the sale of recycled materials is estimated to be between $50,000 and $100,000 annually, with a potential for higher revenue in the next 2-3 years.

Environmental Implications

The sale of recycled asphalt and concrete would reduce the use of natural materials, thus limiting the depletion of gravel pits and reducing the hauling distance from 100km to 10km, reducing harmful emissions. Furthermore, 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 our community, coupled with the aging infrastructure, puts significant financial pressure on City services. At some point, unless additional sources of revenue are identified, trade-offs or service levels reductions will need to be considered by Council and the community. 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

The revenue generated from the sale of materials would be reinvested back into the City in order to deliver programs and services to residents and help to alleviate the pressure on property taxes that foster the economic and social well being of citizens and result in the wise stewardship of public assets.

The City's involvement in the sale of recycled materials will have a negative impact on aggregate producers as well as one existing business that currently supplies recycled concrete and asphalt as well as virgin granular materials to others. The quantity of their sales may potentially be reduced by the quantity of recycled materials sold by the City. This impact would be partially offset by the additional demand for materials created by the construction of the Regina Bypass and the construction of the new Stadium. The annual market output of the area around Regina is estimated at two million tonnes per year. The potential City sale of recycled materials estimated at 25,000-50,000 tonnes per year would represent 1.25-2.5% of the total market. The companies supplying granular and recycled materials would have an option to bid on the crushing of the recycled materials for the City, and could potentially distribute their portion of these materials. This would mitigate the negative impact associated with the loss of the potential sales of their own products.

Accessibility Implications

None with respect to this report.

COMMUNICATIONS

The Administration invited the stakeholders (materials suppliers, asphalt mix producers, paving contractors, land developers and Saskatchewan Heavy Construction Association) to provide feedback on the proposed implementation of the new revenue opportunities. Their feedback was considered and impacted the recommendations included in this report. The summary of the feedback is attached as Appendix B.

The most current price list and instructions regarding how to pursue the purchase of recycled materials will be posted on the City's website. It will be also communicated to construction associations.

DELEGATED AUTHORITY

The disposition of this report requires City Council approval.

Respectfully submitted,

Les Malawski, A/Director
Roadways and Transportation Services

Respectfully submitted,

Karen Gasmo, Executive Director
Transportation & Utilities

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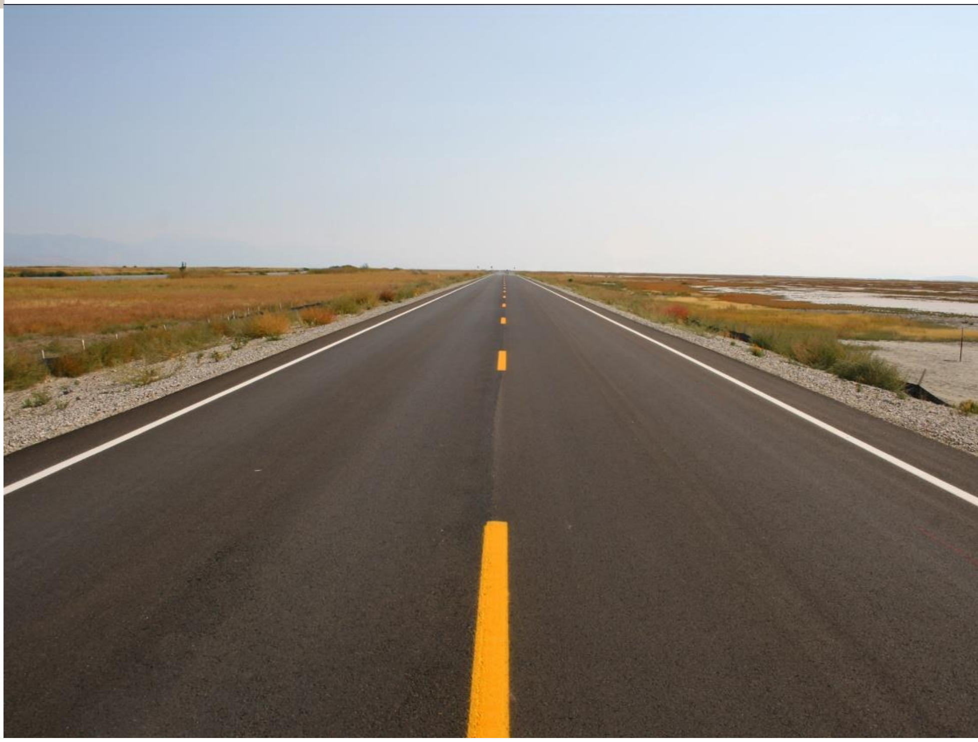
LM/cp/bjd

City of Regina Asphalt Review Interim Report



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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 1st 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)[1]						
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)[2]						
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[3]
Cost of 10,000N slag asphalt mix[4]		$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

[1]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.

[2]Internal cost includes portion of PST that the City of Regina pays (City of Regina does not pay PST on granular materials.

[2]Internal cost for 2010 is a weighted average of two 10,000 N mixes (mix 4- 65% and mix 6-35%).

[3]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 that $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 simultaneous 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 (1.16for 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

APPENDIX B

Stakeholder Consultations Feedback

Saskatchewan Heavy Construction Association (SCHA) Feedback:

- The capacity of the asphalt supply market is more than sufficient at this time, so the market does not require the City's intervention. There are currently ten (10) asphalt plants able to produce asphalt mixes in the Regina area, six of which currently produce asphalt mixes.
- It is not the City's mandate to fix private market problems, or to attempt to lower the cost of private projects delivered by the construction industry for the Regina community.
- The City's involvement in the paving industry should be limited to paving and maintaining City roads.
- The SHCA is concerned that the City's involvement in the market may start out minor, but would grow rapidly if successful, making the City an unbeatable source of competition for private contractors, who are already struggling with the current competition in the market.
- Selling asphalt mixes to out-of-town companies would have a negative impact on the local industry and would result in long term loss for the City.
- The City would be putting itself at risk by selling asphalt mixes to out-of-town contractors as many of them are sub-standard companies.
- The current market demand for recycled concrete and asphalt is lower than what the private industry is able to supply. The SHCA would not support the City's involvement in the retail of crushed asphalt and concrete in this area. The SHCA would, however, support the City in offering for sale either recycled or raw recyclable concrete and asphalt in large quantities (100,000 tonnes) and allowing the industry to resell it to contractors.
- If the City is selling asphalt at $2/tonne higher than the average market price, the asphalt producers would loose sales from contractors working on projects located close to City plant. The plants currently providing asphalt mixes to others are located outside the City limits.
- There is no single market price; each producer sells asphalt mixes at different prices to different customers and the producers were not willing to disclose those prices.

Midsize and Small Paving Contractors' Feedback:

- If the City sells asphalt mixes above market prices, midsize and small paving contractors would not be interested in purchasing it unless asphalt is not available from other plants, or if small quantities are needed in areas close to the City plant.
- The local paving contractors are concerned that with many out of town contractors already doing work in Regina, there may not be enough work to go around, especially if the City starts providing asphalt to others;.

- Only one paving contractor, who also owns an asphalt plant that produces mixes for internal crews, stated that they would buy the City's asphalt if their plant were to break down while their crews were in the middle of the project.
- Currently, there is one asphalt plant that supplies asphalt mixes to anybody without any restrictions. As their price is on the high end, this plant is concerned that if the City were to enter into the asphalt market, they may experience a drop in business (mostly out of town contractors).
- The prices disclosed by paving contractors and by one of the asphalt suppliers range at the moment from $95/tonne to $120/tonne.

A survey was sent to land developers in order to determine whether they have a sufficient supply of road construction services to meet their needs, and if their industry would benefit from road building contractors having access to City-provided asphalt mixes and recycled materials. The reply that came from the President and CEO of the Regina Home Builders Association, on behalf of the developers listed a number of questions and concerns, which could be interpreted as there being no interest in City-supplied asphalt or recycled materials for the subdivision work from the developers at this time.