



STAFF REPORT ACTION REQUIRED

Collaborating for Competitiveness: Aerospace Campus Cluster (Implementation Action 2)

Date:	April 2, 2013
To:	Economic Development Committee
From:	General Manager, Economic Development & Culture
Wards:	All
Reference Number:	

SUMMARY

This report provides an overview of the aerospace cluster in the City of Toronto and surrounding region, as well as information on the proposed development of an aerospace industry training, research, innovation, and manufacturing campus within Parc Downsview Park.

This report recommends that the City continue its efforts to create an aerospace campus in collaboration with key stakeholders including the federal and provincial governments, academia, industry, and labour.

RECOMMENDATIONS

The General Manager, Economic Development and Culture recommends that:

1. City Council support continued efforts to create an aerospace industry training, research, innovation, and manufacturing campus within Parc Downsview Park.
2. Economic Development and Culture staff, working in concert with City Planning, Transportation Services, Finance, Toronto Water, and other external stakeholders, report back to the Economic Development Committee with regards to progress on the preparation of a proposed implementation plan including details on the funding needed from all parties.

Implementation Points

The Aerospace Campus Working Group, Co-Chaired by Councillors Augimeri and Thompson will continue to have carriage of matters related to advancing the campus proposal.

Financial Impact

There are no financial implications resulting from the adoption of this report. Later reports will outline the funding needed from all parties.

DECISION HISTORY

At its meeting on May 8 and 9, 2012, City Council adopted Clause ED13.3 from the April 23, 2012, Economic Development Committee which contained several recommendations including that Council endorse the development of an aerospace campus cluster within designated employment areas of Parc Downsview Park, subject to the appropriate public planning approval process.

Council also approved the creation of a working group co-chaired by Councillors Maria Augimeri and Michael Thompson with a view to advancing the development of an aerospace campus, and also requested that staff report back to the Economic Development Committee with an overview of the aerospace cluster.

<http://app.toronto.ca/tmmis/viewAgendaItemHistory.do?item=2012.ED13.3>

ISSUE BACKGROUND

Several years ago City Council recognized aerospace as a strategic industrial cluster that is crucial to Toronto and Ontario's economic growth and as a leader in innovative advanced manufacturing. The cluster generates significant exports and supports our international reputation as a knowledge-based economy building on Toronto's proud aerospace history spanning 100 years.

Bombardier Aerospace is the City's largest manufacturing employer with a current complement of some 4,000 employees, and is the heart of the Ontario aerospace industry as it's only Tier 1 Original Equipment Manufacturer (OEM) of airplanes. For every direct job at Bombardier's Downsview facility an additional three jobs is created at local suppliers. Bombardier is currently proceeding with an expansion of its plant whereby a new Aerostructures building and a Flight Test facility are being added to accommodate production of the newest variant of their Global series business jets. The fact that the Toronto site was successful in winning this new multi-million product mandate is a testament to the high regard for the Toronto site's capabilities and helps raise the profile of our world-class standing.

Furthermore, some of the local suppliers also form part of the supply chain to other leading firms around the world including Boeing and Airbus for example.

The strength of the Toronto aerospace cluster, which is second largest in Canada after the Montreal area, lies in its breadth and depth of capabilities in systems and integration, and its pool of highly-skilled labour, providing a broad range of aerospace/aviation design, manufacturing, and product support for the global industry.

Approximately 80% of the Ontario aerospace cluster's 350 companies providing over 20,000 jobs, and generating some \$6 billion in annual sales, are located in the Toronto Region.

The cluster is a world-leader in several key niche markets including engines, landing gear and environmental systems, to name a few.

For context it is important to note that Canada's aerospace industry is 5th largest in the world, and Ontario has an approximate 35% share of the Canadian output.

There is a critical mass of aerospace companies and suppliers in the region that have a number of key strategic advantages including:

- i) a location at the center of North America's manufacturing heartland;
- ii) transportation and communications networks that are recognized as being among the best in the world;
- iii) a highly efficient and cost-competitive business climate;
- iv) a highly skilled workforce and leading-edge learning institutions;
- v) competitive tax incentives for research and product development; and,
- vi) an exceptional quality of life.

Toronto area firms are world leaders in selected niche markets such as:

Market Niche	Company
Flight and maintenance training simulators	Atlantis Systems International Inc.
20 to 70 seat turboprop aircraft	Bombardier Aerospace
Global Express business jets	Bombardier Aerospace
Satellite multiplexers and switches	COM DEV
Satellite, aircraft and ground-based antennas	EMS Technologies
Landing gear systems	Goodrich Corporation-Landing Gear and Messier-Dowty Inc.
Environmental control systems	Honeywell
Electric power systems	Honeywell
Helicopter recovery systems	Indal Technologies Inc.
LCD Displays	Luxell Technologies Inc.
Integrated space robotics systems	MacDonald Dettwiler & Associates
Gearboxes and transmissions	Northstar Aerospace (Canada) Inc.
Rotary and linear position transducers	Novatronics Inc.
Small gas turbine engines	Pratt & Whitney Canada
Vacuum furnaces	Vac Aero International

Aerospace is a strategic cluster that is crucial to Toronto's, Ontario's, and Canada's economic future because it:

- (i) is a leader in innovative advanced manufacturing;
- (ii) generates significant exports;
- (iii) supports our international reputation as a knowledge-based economy; and
- (iv) is a high-skill and high-wage industry.

According to the Aerospace Global Report – Clearwater, the global aerospace and defense sector has been valued at over \$920 billion, and has been growing at a rate of 8.7% in recent years. The sector is projected to grow to \$ 1190 billion by the end of 2014. The aerospace sector in Canada is poised for substantial growth with an estimated \$3.2 trillion in new global commercial aircraft orders, and a further \$661 billion in global business aircraft orders in the next 20 years.

Every effort must be made by governments at all levels, private sector corporations, academic institutions, and trade unions, to work together to capture our fair share of this expanding market, and to ensure that our proud history of leading edge aerospace development and manufacturing is sustained well into the future to maintain our pre-eminence in key world markets, and to continue to provide good paying jobs and stimulate economic growth and development. Canada's, Ontario's and Toronto's economic survival depend upon it.

COMMENTS

The aerospace sector, like many other industrial sectors, has been globalized for several years. While this is particularly advantageous for large multi-national firms who can source low-cost components, the impact on smaller local firms in the supply-chain can be harmful if not disastrous. This situation is not new and has existed for some time now as evidenced by the marked decline in Ontario's manufacturing base in recent years. Moreover, the number of jurisdictions aggressively competing for a larger share of the manufacturing market, and particularly in the aerospace sector, has increased dramatically in recent years and competition is fiercer than ever for product mandate. In addition to long-established aerospace clusters in the U.S., Europe, Russia and Brazil, emerging clusters in places like Mexico, China, India, Singapore, Morocco, and elsewhere, are presenting an increased threat to Ontario and Toronto area manufacturers.

The key to remaining competitive in this environment is innovation and leveraging scarce resources through collaboration. Just as larger OEM's must continuously adapt and improve products to satisfy customer demand and capture market share, local Small and Medium Enterprises (SME's) looking to survive and grow must also evolve and move up the value-chain by developing new technology, investing in state-of-the-art equipment, attracting and retaining a highly skilled labour pool, adopting lean manufacturing processes, and focusing on value-added assemblies and sub-assemblies as OEM's continue the trend of dealing with fewer suppliers.

Governments have a role to play in helping create an environment where companies cannot just survive, but continue to grow, to invest locally, and to create high paying jobs. The need for collaboration between industry, academia, labour, and all levels of government has never been greater.

The importance of collaboration and the ability to leverage contributions from multiple stakeholders is well established and features prominently in the City of Toronto's most recently released economic development strategy "*Collaborating for Competitiveness: A Strategic Plan for Accelerating Economic Growth and Job Creation in Toronto.*" The approach espoused in the City's most recent strategy document is clearly being demonstrated through the action being taken by the Aerospace Campus Working Group, capably co-chaired by Councillors Augimeri and Thompson with a singular focus on achieving results and working towards the achievement of the campus vision.

For its part, the Province of Ontario has long recognized aerospace as a strategic industrial cluster that is vital to the province's economic well-being and has recently been increasing its efforts, in concert with industry participants and the Ontario Aerospace Council, to help the sector achieve its full growth potential for increased exports and employment generation. The province also places great emphasis on innovation and collaboration as key elements to success and has assigned a senior staff person from the Ministry of Economic Development, Trade and Employment to the Aerospace Campus Working Group. Additionally, staff from the Ministry of Training Colleges and Universities are fully engaged in the aerospace campus planning process.

At the federal level, the Government of Canada commissioned a committee chaired by David Emerson to work in tandem with the Aerospace Industries Association of Canada to develop a national aerospace strategy. The Emerson Committee released a report in November of 2012 that set out specific strategic recommendations which, if acted upon, are intended to support the Canadian aerospace industry for years to come. The report and the recommendations contained therein strongly emphasized the need for innovation, increased Research and Development (R&D), enhanced collaboration, and skills development. It is important to note that Recommendation 17 of the Emerson report specifically mentions the Downsview area as a potential hub for an aerospace innovation campus cluster.

As a follow-through to the above-noted report the federal government's most recent budget included several important items relevant to the aerospace sector. The following excerpts from a government media release highlight the Canadian Government's commitment to improving the competitiveness of key industries like aerospace by:

- Providing \$920 million to renew the Federal Economic Development Agency for Southern Ontario (FedDev Ontario) for five years, starting April 1, 2014.
- Providing \$200 million over five years, starting on April 1, 2014, for a new Advanced Manufacturing Fund in Ontario, as part of the renewal of FedDev Ontario.

- Providing stable funding of close to \$1 billion over five years for the Strategic Aerospace and Defence Initiative, and creating an Aerospace Technology Development Program with funding of \$110 million over four years beginning in 2014-15, and \$55 million annually thereafter.
- Providing an additional \$37 million per year to strengthen partnerships between industry and researchers, to help transform scientific knowledge into the innovative new products and services that open and expand markets and improve our quality of life. This includes \$12 million annually for the College and Community Innovation Program, which supports collaboration between colleges and industry, with a focus on helping firms become more innovative and productive.

The Downsview aerospace campus discussed herein may be eligible for a share of the above-mentioned federal funding provided that a concerted and collaborative effort is sustained by all stakeholders. This effort will necessarily require contributions from other levels of government and industry, based on a solid business case, in order to make the aerospace campus vision a reality and deliver on its potential to bolster the local, regional, provincial, and federal economies for decades to come.

In light of the emerging opportunities and the current threats faced by the local aerospace sector, it is both noteworthy and very timely that the three levels of government have apparently reached the same conclusions and recognize the importance of the aerospace sector, that they see the need to take immediate strategic action, and that they understand the catalytic effects of collaboration and innovation. This alignment of strategic intent between the three orders of government is unprecedented and is a clarion call for immediate, sustained, and co-ordinated action to seize the opportunity to deliver measurable and positive results for the benefit of all stakeholders and constituents by fostering the creation of high-paying jobs.

Campus Concept

The seed for the campus concept was actually planted several years ago when the City of Toronto and the Ontario Aerospace Council, supported by the Government of Ontario, orchestrated multiple stakeholders in the preparation of an aerospace strategic plan under the auspices of the Aerospace Action Partnership. The strategy, titled *Flight Path: A Vision for the Future* was formally launched with much fanfare in 2005, and under Action Plan item no. 5 proposed the creation of the "Ontario Centre for Aerospace" to include an "Advanced Technologies Industrial Park" on the lands adjacent to the Bombardier plant, i.e. Parc Downsview Park.

Over the last couple of years representatives from Centennial College, University of Toronto Institute for Aerospace Studies (UTIAS) , and Parc Downsview Park, with the constant support, urging, and encouragement of Economic Development staff, have been refining a campus concept and making concerted efforts to gain support for the idea. The original impetus for interest by Centennial College, renowned leader in technical training, is based on the recent mandate they received from Bombardier to provide training to its staff, and having suitable facilities in close proximity to their client would be ideal. For

its part, UTIAS is in need of upgraded state-of-the-art facilities as the antiquated building it currently occupies is reaching the end of its useful life and the state of the physical plant does not support the well-deserved world-class reputation for excellence that UTIAS has earned over the years.

However, the benefits of a campus cluster go well beyond meeting these basic physical needs as the synergies to be created by co-locating businesses and academic institutions in a centre of excellence as contemplated, can produce exponential returns by offering valuable opportunities for collaboration thereby leveraging scarce resources for maximum long-term impact, as well as drive innovation in technology and products to both support existing mandates and win new contracts in order to capture a larger share of the aerospace market, and by developing the highly-skilled labour force demanded by a knowledge-based economy. Furthermore, the proposed location of the campus cluster adjacent to the new subway station within Parc Downsview Park would help maximize the returns on the multi-million dollar investment in mass transit made by the federal, provincial, and municipal governments.

A report dated January, 24, 2013, titled *Value Planning Study: Stimulating an Aerospace Cluster at Downsview*, completed for Centennial College by the Value Planning Group under the leadership of Ian Dobson, cites several of the benefits of an aerospace cluster at Downsview as enunciated in the following excerpt:

"The Downsview Lands present an opportunity to leverage existing public assets to foster an employment and industry stimulating development opportunity unique in Ontario and possibly Canada. The benefits of a new policy direction to reorient the development of the employment lands at Downsview to provide further support to the aerospace hub:

- ✓ *Collocation and enhancement of academic aerospace programming*
- ✓ *Reduction of academic facility construction and operating costs*
- ✓ *Increased academic/industry collaboration and increased innovation*
- ✓ *Re-purposing of under-utilized facilities and lands*
- ✓ *Leveraged public investments (recreation, transportation, surplus federal defense lands)*
- ✓ *Employment expansion (high end jobs)*
- ✓ *Expansion of assessment and tax base*
- ✓ *Expansion of transit ridership*
- ✓ *Enhanced competitive positioning on global stage*
- ✓ *Enhanced export trade".*

"The measurable outcomes resulting from stimulus include:

- *Real Estate and Infrastructure Uplift*
- *Construction Stimulus Effect of Building Out the Cluster*
- *Transit Ridership Uplift*
- *Property Tax Uplift*
- *Cost Effective Campus Creation*
- *Employment Uplift Including Tax Uplift*

- *More Skilled Industry Participants*
- *Increased Competitiveness of SMEs*
- *Ancillary Commercial and Neighbourhood Uplift"*

The above-mentioned Value Planning Study underscores the potential impact of the campus cluster in the following quote:

*"Value studies for promising value added projects usually exceed a benefit ratio of 2:1 and for the most part are in the 3:1 range. For the Downsview lands, the ability to leverage existing public assets and a Tier One aerospace firm to improve an industrial park provides the basis for an enhanced investment to return ration. **The net public benefit ratio in this study is in excess of 12:1. The Value Planning group has conducted over a dozen similar studies using many of the same techniques of benefit analysis and no other study has achieved this high a benefit ratio.**"* (Note: emphasis added).

Next Steps and Work In Progress

Infrastructure requirements

The following infrastructure projects are required to enable the development of the aerospace campus cluster in the Allen District and Sheppard/Chesswood Districts. These infrastructure elements also comply with the approved Secondary Plan. Some of this work may be eligible for funding through Development Charges. A budget estimate of approximately \$55 million for the items listed below are based largely on estimates provided in the 2010 Downsview Area Secondary Plan-Transportation Master Plan Report according to representatives from Parc Downsview Park and Build Toronto:

- Transit Road Extension
Extension north from the existing Transit Road north to Chesswood and Sheppard
- Bombardier Access Road to west and north
Perimeter road from Bombardier property line, northerly to East/West Road and bridge over Metrolinx line to road to Keele St.
- East/West Road and Underpass
Road from Transit Road to Keele St. and underpass of Metrolinx line at new subway station
- Water Service Upgrades
Includes advancing the City's plan to upgrade water pressure districts for Chesswood Neighbourhood
- Sanitary Service Upgrades
Includes improving sanitary service connections throughout the Allen and Chesswood Neighbourhood.

According to PDP and Build Toronto, the estimate represents so-called external costs and they include the infrastructure work required to accommodate development growth contemplated under the Downsview Secondary Plan and suggest that some may be

funded through Development Charges. City staff have re-iterated that internal servicing costs within a particular development subdivision are the responsibility of the developer.

It should be noted that the estimate above is preliminary, and the Transportation Services Department's own preliminary estimates place the costs at closer to \$100 million (in 2009 dollars). These estimates will be further refined in the coming months, and will be the subject of subsequent reporting, with the benefit of three major studies currently underway being the Roads Environmental Assessment, the Water Pressure Hydraulic Study, and the Development Charges Study, as described in greater detail in the following paragraphs.

Roads Environmental Assessment

According to Transportation Services staff, the City issued a Request For Proposals (RFP) for the Downsview Class Environmental Assessment (EA) work on January 18, 2013. The RFP closed on February 18, 2013 and it is anticipated that a consultant will be selected by late March or early April 2013.

The purpose of the study is to carry out Phases 3 & 4 of the Municipal Class EA process for the major roads that were identified as part of the Downsview Area Secondary Planning process and the accompanying Transportation Master Plan.

The Class EA will consider the following elements:

- a 2.3 kilometre (km) northerly extension of Transit Road from Allen Road to the intersection of Chesswood Drive and Sheppard Avenue West;
- a 1.2 km westerly extension of Transit Road from a point south of the Chesswood Drive/Sheppard Avenue West intersection to the Keele Street/Grandview Avenue Drive intersection
- the reconfiguration/modification of the existing Transit Road connection to Allen Road;
a 2.6 km section of the National Urban Park Ring Road that extends south from the future Transit Road along the west side of the airport runway and crossing the rail line to connect with Keele Street. This segment will include grade separated crossings of the Metrolinx/GO Transit Barrie rail line across Sheppard Avenue West.

Note that the portion of the ring road extending from Keele Street, approximately 600 metres east, is not part of this study and is being addressed separately.

As part of the Class EA, the consultant will be responsible for preparing a functional design report, which will document the plan, profile and cross section drawings and provide a breakdown of cost estimates for the preferred alignment. The functional design report will also address utilities (new or modified overhead, underground); drainage (storm and sanitary sewers, culverts, water quality and quantity management plans); subsurface utility; engineering; geotechnical and soil reports; preferred right-of-way cross sections (sidewalks, landscaping, etc...); illumination; bicycle/multi-use paths within the

right-of-way; traffic signals, signage and pavement markings; and railway and arterial structures report, including foundation assessment.

The project team will meet with the impacted landowners as necessary to discuss the study, coordination issues and any potential concerns.

In terms of consultation with the public, Transportation Services are planning to hold a single public information meeting. Depending on the proposal that is accepted, it is expected that this will happen in the fall of 2013 or early winter 2014.

Completion of a draft Environmental Study Report (ESR) is anticipated early 2014, with the final ESR placed on the public record for review and comment shortly thereafter.

Water Pressure Study

Toronto Water officials have advised that proposals for the water pressure hydraulic study for the Downsview area have been evaluated and Aecom Canada Ltd. has been selected as the proponent.

The study includes developing estimates of current and future water demands in the study area, taking into account planning data and proposed future development, confirm design criteria, modification and recalibration of Toronto Water hydraulic models for the affected pressure districts, including field testing, and identifying the optimal solution (combination of pressure district re-alignment, main construction and pumping upgrades) to service current and anticipated future demands.

Toronto Water expects to execute the consulting services agreement shortly and kick off the assignment, with completion expected by mid-summer 2013. This will in all likelihood lead to a design assignment to implement the required work, hopefully awarded by the fall 2013.

Depending on the complexity of the optimal solution, Toronto Water would expect to be able to tender a construction contract by late 2014.

Development Charges

The Downsview Area Secondary Plan, including the Transportation Master Plan (TMP) that was developed for this purpose, was approved by City Council and the OMB. The approved Secondary Plan includes a provision that indicates that all municipal streets will be constructed to City standards and conveyed to the City by the developers at nominal cost. However, some of the infrastructure work identified above may serve both a local and regional function and therefore could be eligible for partial funding from Development Charges. The extent to which the infrastructure needs are eligible will be determined by considering the results of the Environmental Assessment that is currently being undertaken and the principles set out in the City's local service policy and guidelines. The local service policy and guidelines establishes, in general terms, the size and nature of infrastructure that is funded by development charges and infrastructure that is considered a direct developer responsibility as a condition of planning approval.

The City is currently undertaking a review of its Development Charges By-law. This review is required every five years, if not sooner, according to the Provincial Development Charges Act, in order to implement its development charges rates. The City's Development Charges By-law will expire in early 2014. The review is being conducted in order to adjust the development charges rates to reflect updates to the City's growth related capital expenditure plans, including the recently adopted 2013-2022 Capital Budget & Plan.

This review may have implications for the aerospace campus in terms of the determination of the extent to which the subject improvements are eligible for funding from development charges. There may also be implications flowing from the inclusion of the required infrastructure in the City's 10 Year Capital Plan. The ultimate determination of these matters is necessary to identify funding sources in order for the aerospace campus to proceed.

Restrictive Covenants

The lands held by Build Toronto next to the existing Downsview subway station at the south-east corner of Allen Road and Sheppard Avenue W. are subject to covenants that restrict the height of any future buildings as well restricting their use to industrial/commercial development. These covenants were registered on title at the time of their purchase many years ago by the former Metro Toronto, to protect for the operation of the adjacent Downsview airport runway then operated by DND and now operated by Bombardier.

In order for Build Toronto to develop their holdings and maximize the value of their real estate in accordance with mixed-use plans, including significant blocks of residential development, as recently approved by the Ontario Municipal Board, Build Toronto must secure the release of the restrictive covenants from the benefiting parties i.e. Bombardier, Department of National Defense, and Parc Downsview Park.

Negotiations between the parties have been underway for several years and can hopefully be concluded reasonably soon by all parties working in good faith. The proposed aerospace campus is considered by most participants to be just the impetus required to reach a resolution to this long-standing issue.

It is noted that Build Toronto, and thus the City of Toronto, also benefits from the proposed infrastructure improvements described above as they are also key to unlocking the development potential for the Build Toronto lands in the area. Additionally, Build Toronto may benefit from spill-over demand for office space from the aerospace campus and related industry which could choose to locate in the north-west quadrant of Build Toronto's land slated for commercial/office development immediately next to the existing Downsview subway station.

Campus Master Plan and Business Case

A Campus Master Plan Sub-committee of the Aerospace Campus Working group has been set up and is working on the preparation of a master plan which will inform the

completion of a District Plan pursuant to the Downsview Secondary Plan, leading to the implementation of the appropriate Zoning by-laws, subject to the normal public process, to set the framework that would allow the proposed development to proceed.

The Campus Master Plan will be fine-tuned over the next few months and should include details on proposed development blocks, street patterns, bicycle and pedestrian connections, building areas, and building types.

A business case is also being developed that will flesh out some of the details of the project including, background, context, estimated costs, and economic impacts with a view to garnering support and financial commitments.

A presentation by Parc Downsview Park and Centennial College is anticipated to provide some conceptual details, an outline of estimated development potential, and discuss the potential synergistic and catalytic outcomes impact of the project.

CONCLUSION

The City of Toronto must be pro-active in its efforts to achieve the goals set out in the City's economic development strategy and the aerospace sector has the potential to make a major contribution. The City's continued support is crucial in sustaining the progress being made in collaboration with all stakeholders to achieve the full vision of an aerospace campus cluster centre of excellence in Downsview by leveraging public and private investments that will boost the economy and raise the profile of the City of Toronto as a centre for advanced-manufacturing, a leader in cutting-edge innovation, and bolster its reputation as a world-class knowledge-based economy.

CONTACT

Frank Bedard, Economic Development Officer
Business Retention & Expansion
Tel: 416-394-8069
Email: fgbedard@toronto.ca

SIGNATURE

Michael H. Williams, General Manager,
Economic Development & Culture