

RAISE THE HAMMER

Can Hamilton Become a Centre of Innovation?

The opportunities that have the best long-term prospects are not warehouses in the middle of nowhere, but a dense, healthy downtown that mixes uses, welcomes artists, leverages the university and college, and brings creative people together to solve problems

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For all our ingenuity, humans have yet to invent an idea machine. Creativity remains an ad hoc, serendipitous process. Yet if some brilliant meta-inventor were to achieve such an ambitious goal, the result might well resemble a city.

Cities do not generate ideas in themselves, but they do bring creative people into contact: cross-fertilizing ideas from one intellectual domain to another; asking open-ended questions; challenging orthodoxy; forking a project into separate groups that progress independently; and merging forked developments to integrate their best features.

Creativity leads to invention - producing something new. Invention leads to innovation - putting the invention into practice. Innovations that generate value survive and reproduce, feeding the next wave of invention.

In a broader sense, societies that foster the chain of creativity-invention-innovation produce better tools for growing and responding to challenges. At its most impressive, innovation *transforms crisis into opportunity*.

Differentiation, Feedback and Growth

Best known for her 1961 book, *The Death and Life of Great American Cities*, the renowned urbanist Jane Jacobs continued to develop her ideas over the next four decades until her death in 2006. In her 1994 book *The Nature of Economies*, Jacobs theorizes, "Natural processes rule human economic life."

She argues that economies grow through bifurcations - branching and differentiation that emerges from generality and becomes a new generality from which more differentiations can emerge. She highlights the role of positive and negative feedback loops plus "emergency adaptations" to produce a dynamic equilibrium in self-regulating systems.

Just as biological systems capture and use energy, so do economic systems. Like biological systems, density and diversity are critical: "The more different means a system

possesses for recapturing, using, and passing around energy before its discharge from the system, the larger are the cumulative consequences of the energy it receives."

Jacobs' works teem with insight into the crucial roles played by self-organized networks that innovate by discovering uses for otherwise wasted resources.

Place Matters More than Ever

For innovation to happen, creative people need to cross paths regularly so they can rub off on each other. Combined with the opportunities for innovators, investors and entrepreneurs to join forces, this suggests that *place* remains significant.

So argues Richard Florida in his new book *Who's Your City?* Florida, a business and creativity professor at the University of Toronto, gained popularity with *The Rise of the Creative Class* in 2002, in which he first drew popular attention to creative professionals - artists, designers, engineers, entrepreneurs, innovators, inventors, investors, musicians, scientists - and the wealth they generate.

In *Who's Your City?*, Florida shifts focus from the people who drive economic growth to the urban environments that attract and facilitate such people. Florida insists that place is more important than ever. The most creative mega-regions (large, contiguous urban areas often spanning more than one municipality) are diverging ever more rapidly in their rates of growth, producing a "spiky" world.

He argues that most robust mega-regions don't merely specialize, but also *innovate* by growing ecosystems of investors, entrepreneurs and innovators that attract and retain creative people. Mega-regions thereby generate both economies of scale and network effects in great positive feedback loops.



Suburban arterial roads lined with stripmalls and big box stores won't drive an innovative economy (RTH file photo)

Strong evidence suggests that increasing population density and mixing destinations more closely confers measurable economies. When cities intensify, energy and infrastructure costs grow *more slowly* than population, but the innovation rate grows *more quickly* than population.

Scale up a city and you get both an infrastructure productivity boost *and* a boost in the rate of creative output.

Scale up a city and you get both an infrastructure productivity boost *and* a boost in the rate of creative output. Quoting economist Robert Lucas, Florida calls this the "clustering force" and it explains why modern telecommunications have not made place irrelevant. Florida writes, "Creative people and companies cluster because of the powerful productivity advantages, economies of scale, and knowledge spillovers such density brings."

Diversity vs. Specialization

Jacobs moved to Toronto to keep her draft-age sons out of the Vietnam War, and subsequently influenced the city's culture. It was this same culture that attracted Florida, though he came to seize opportunity rather than escape danger.

Both pay close attention to how people actually live and interact, though Jacobs studied individuals on the street and Florida favours statistical analysis. They agree that the real action lies in urban rather than political boundaries, evidenced by Florida's border-

straddling "Tor-Buff-Chester" mega-region, which encompasses Montreal, Ottawa, Toronto, Hamilton, Buffalo and Rochester.

Jacobs emphasized *diversification* whereas Florida emphasizes *specialization*. She disdained public enterprises, dismissing top-heavy megaprojects (like the Spadina Expressway, which she famously helped to cancel) as lumbering intrusions into organic processes. Florida, by contrast, sees an essential role for governments to nurture creative incubators.

Florida spoke at Hamilton's first economic summit last May. Telling the attendees that they "can't help but be part of a boom," he encouraged Hamilton's leaders to see the city as part of the Tor-Buff-Chester mega-region, not as an economic island. He recommended investing in what he calls the Three Ts: *technology* (universities, research centres), attracting and retaining *talent* (especially recent graduates), and fostering *tolerance* for people with diverse values, ideas and lifestyles.



Missing tooth: scaffolding blocks access to the demolished lot of the Balfour Building on King William next to the Lister Building. Richard Florida warned Hamilton not to demolish its heritage buildings. (RTH file photo)

He further admonished his audience to preserve Hamilton's wealth of old buildings and to resist the negativity and defeatism of "squelchers".

Creative City

So how does Hamilton's creative economy measure up?

The [Hamilton Creative City Initiative \(HCCI\)](#) is one attempt at an answer. A joint effort by the Imperial Cotton Centre for the Arts, Centre for Community Study and Community Centre for Media Arts, HCCI defines creative work more narrowly than Florida, focusing mainly on visual and performing arts, broadcasting, film, music, publishing and graphic design - 3.4 percent of Hamilton's labour force.

Phase 1 surveyed creative organizations to sketch Hamilton's creative landscape. (Phase 2 will study creative individuals.) Hamilton's creative sector largely comprises small- and medium-sized businesses with few employees and modest profits. Those businesses enjoy many interlocks, sharing resources, collaborating on projects, using community spaces, and clustering geographically in the downtown core, Southwest Hamilton, and Dundas.

The report concludes that the creative industry "should be viewed as [an economic] cluster that has potential for growth and greater success" and recommends a more active role for the city in supporting, promoting and marketing this cluster.

One such business is [factor\[e\] design initiative](#), a multimedia studio. Factor[e] has occupied all three of Hamilton's creative clusters: it started in Dundas in 1999, moved to James St. South, and is now on Locke St.

Factor[e] president Tyler Cowie says he worked mainly with foreign clients at first because "potential clients [in Hamilton] did not see the value in investing in professional graphics". This has changed: in the past four years, business has shifted from the US and Europe to more local clients, due to what he calls "a shift in perception of the cost/quality of design".

Another issue has been the search for qualified employees. "Good designers and professionals seem to seek work in Toronto or in the US." Demonstrating the tight networking of Hamilton's creative industry, he has "more luck finding skilled individuals by word of mouth rather than through the classifieds or other traditional methods."

Incubating Innovation

Factor[e] is a Hamilton success story, but many creative professionals seek opportunity elsewhere. Simon Woodside is the president and creator of [Semacode](#), which makes software that lets cell phones read website URLs by scanning barcodes.

Woodside lives in Hamilton but works from the [Accelerator Centre](#), a Waterloo research facility started by the University of Waterloo, the city, province and federal government. He explains, "The key resources for a startup company are there... You have a talent base. It's very easy to find and hire very talented software developers and engineers in Waterloo because of the university."

Echoing Florida's emphasis on attracting and retaining talent, Woodside adds, "Many of the co-op students [and graduates] like to work in town, even if there are more prestigious jobs available in other parts of the world."

Woodside believes Hamilton lacks "the talent base to support a software company, let alone knowledgeable business people to network with, service providers, and investors." Waterloo enjoys a "positive reinforcement effect" starting with early spinoff firms, like [Watcom](#) in 1981 and [Research In Motion](#) in 1984. "If you look at the history of Silicon Valley you see a similar pattern, except starting a bit earlier. The same with MIT in Cambridge."

Disconnected Pieces in Hamilton

Despite a university, college, diverse population, extant industry, booming health sciences and viable urban form, Hamilton has yet to put the pieces together. We're not investing in technology, attracting creative professionals, or doing enough to promote a culture of tolerance for new ideas.

One attempt to connect the pieces is [McMaster Innovation Park \(MIP\)](#), a planned research centre in southwest Hamilton specializing in advanced manufacturing and materials, nanotechnology and biotechnology. Created with McMaster University and all three government levels, MIP is designed on the principle of *connections*.



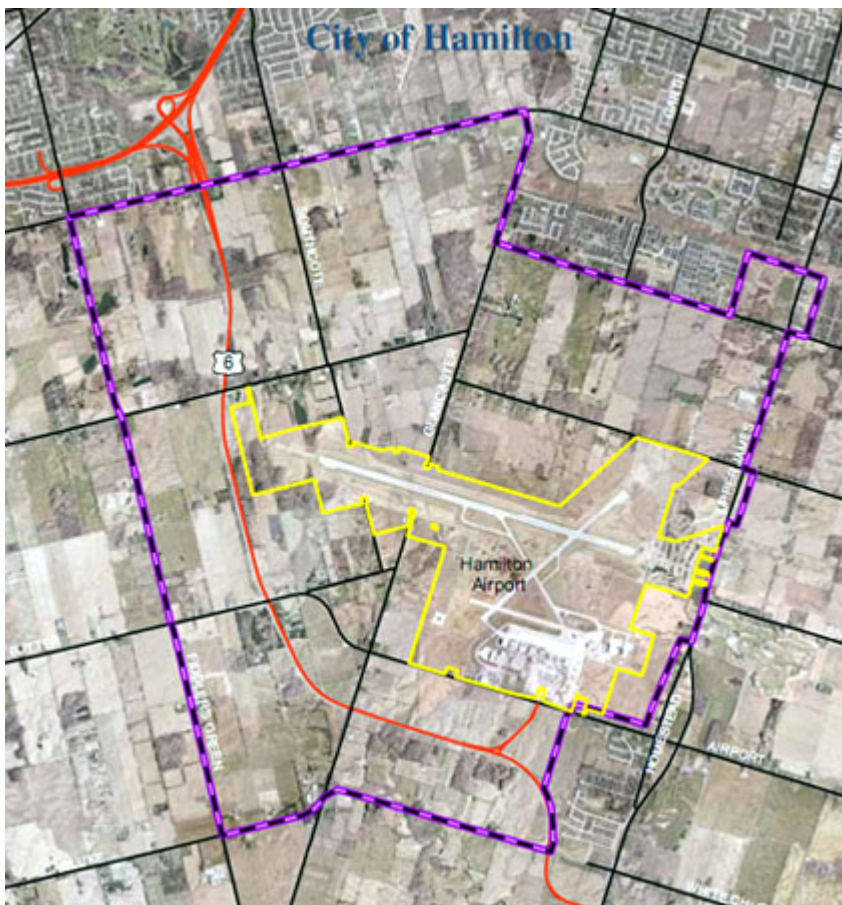
McMaster Innovation Park site plan (Image Credit: McMaster Innovation Park Site Fly Through)

Supporters hope it will transform an abandoned industrial site into an incubator for spinoff business start-ups combining researchers, entrepreneurs, and venture capitalists. The site plan emphasizes "an urban neighbourhood to facilitate interaction, creativity and innovation," mixed uses, open space for chance meetings, ecological building design and sustainable transportation.

Aerotropolis vs. Industrial Sprawl

It's an exciting initiative, but it is the exception in Hamilton planning, not the rule. The city's planning and economic development department have pinned their hopes not on MIP or other brownfield initiatives but on the Airport Employment Growth District (AEGD), 1,134 hectares of prime farmland around Hamilton International Airport in Mount Hope.

Since 2005's Growth-Related Integrated Development Strategy (GRIDS), the airport plan has served as the non-negotiable core of Hamilton's economic development strategy. It was included in all six GRIDS proposals even though it violates seven of the nine Grids Directions, which support a firm urban boundary, intensification, compatible mixed uses, and maximizing existing infrastructure.



AEGD Study Area (Image Credit: Hamilton Airport Employment Growth District Land Use Report, City of Hamilton, May 2008)

It originated as "aerotropolis" after an economic model by John Kasarda, an economics professor at the University of North Carolina-Chapel Hill. According to Kasarda, eighteenth century cities grew around shipping ports, nineteenth century cities grew around rail nodes, and twentieth century cities grew around highways. Twenty-first century cities will grow around airports, as people demand the speed, flexibility, and convenience that only air transport can provide.

In the aerotropolis economy, the three As ("accessibility, accessibility, accessibility") replace the three Ls ("location, location, location"), as high-tech companies leverage proximity to the airport.

It sounds impressive, and Kasarda's description is nuanced - a dense, diverse, well-planned, and even aesthetically pleasing mix of complementary facilities and amenities. However, the city's plan doesn't appear to do this. Instead, we get a collection of large, low-density, single-use lots used mainly for warehousing and logistics (two-thirds of the total land) with some high-tech manufacturing, punctuated by the odd strip plaza.

The price tag will be huge: hundred million dollar servicing charges, the loss of prime farmland, and a dramatic shift in the city's centre of gravity, not to mention the opportunity cost. Worse, the plan's architects seem determined to see the project to completion whether or not it actually makes sense.

Stacking the Deck

After council voted in June 2005 to expand the urban boundary (despite 21 out of 28 delegations opposing the move), two groups appealed to the Ontario Municipal Board: a citizens' group called Hamiltonians for Progressive Development and the Ontario Ministry of Municipal Affairs and Housing (MMAH). A [September 2006 settlement](#) required the city to conduct land use studies and public consultation through a community liaison committee before expanding the urban boundary.

Hemson Consulting [presented](#) a "comprehensive employment land study" to council in February 2007. It offered just one option: logistics and warehousing around the airport. It narrowly defined employment lands as "what occurs in business parks" and dismissed brownfield redevelopment altogether. It also neglected to project energy prices over the next 25 years, assuming they would remain at then-current rates.



Hwy 403 winds up the Escarpment toward Ancaster (RTH file photo)

Council ordered staff to prepare a supplemental report on brownfield employment opportunities. That report, also prepared by Hemson, largely redefined the city's 1,386 brownfield properties [out of existence](#), concluding that less than 75 acres are available.

The community liaison committee was [stacked with airport supporters](#), including representatives from the airport, Chamber of Commerce, realtors association, a commercial property developer and the Agricultural and Rural Affairs Committee, a housing developer, a real estate agent, the former Glanbrook town planner, and an air traffic controller.

Meanwhile, [MMAH has challenged several assumptions](#) used to calculate the total land required. Based on the MMAH figures, the total size should be much smaller. City staff knew about this for several months, but Council didn't see the ministry's letter until the day of the meeting to approve phase 1 of the study.

A motion to halve the employment area was defeated, though the city later [backed down](#) on some of its assumptions about the recommended size of the study area.

Looming Energy Crisis

Creativity turns crisis into opportunity by identifying challenges and inventing new ways to solve them. This needs [good feedback mechanisms](#) to work properly, but our feedback system has broken down, at least with respect to the city's airport development plans.

The most glaring issue is the fact that energy prices rose steadily for a decade before [collapsing last summer](#) in the wake of a [global economic crisis](#). Most analysts believe oil

prices will spike again once the economy recovers. The global rate of oil production is at or near an all-time peak and will soon begin a permanent decline. This is "peak oil", and it is finally starting to enter the mainstream.

Yet the city refuses to take into account what role energy price volatility will play in airport-related development, even though a city report completed in early 2006 examines precisely this issue: Richard Gilbert's study [Hamilton: The Electric City](#) [PDF link].

In June 2005, as a response to growing public concerns about energy security, Hamilton City Council instructed planning staff to "prepare an analysis to establish a strategy to deal with the potential fossil fuel crisis" and assess the potential impacts on Hamilton's long-term economic plans. Staff contracted with Gilbert to prepare the report.

A former Toronto councillor and president of the Federation of Canadian Municipalities, Gilbert has worked since the 1990s as an urban planning and energy policy consultant, including work for the International Energy Agency. With Anthony Perl, he just co-authored *Transport Revolutions: Moving people and freight without oil*.

Peak Oil and Economic Development

We met in June 2005 to discuss his criteria for whether rising energy prices will impact Hamilton's development plans. Within the planning horizon (25 years), gasoline and natural gas (NG) prices would have to quadruple to force substantial changes in land use and transportation.

If the likelihood of this were less than 25 percent, he would not recommend any change from the status quo. If the likelihood exceeded 25 percent but not 50 percent, he would recommend keeping energy focus as a "Plan B". Above 50 percent, he would recommend putting energy front and centre.



Richard Gilbert explains how cities must respond to rising and volatile energy prices in a January 8, 2008 lecture in Hamilton (RTH file photo)

At the time, Gilbert doubted the latter scenario, telling me, "I think the advocates who pushed for this study are going to be disappointed with my conclusions." He expected to find less than 50 percent chance of gas and NG prices quadrupling.

Two months and much research later, Gilbert turned the tables with the first draft of his report, which concluded that energy prices were more than fifty percent likely to quadruple by 2018, only 13 years hence. An August 22, 2005 *Hamilton Spectator* article quoted him saying, "Air travel in the ways we understand it is doomed."

City staff requested more changes, and Gilbert finally presented to Council in April 2006, when oil was trading at \$55/barrel. Council asked staff to prepare follow-up studies on Hamilton's vulnerability to peak oil. More than two years later, those studies are still pending.

At the time, several councillors tried to press Gilbert to acknowledge the value of the airport lands as a place to develop his vision of an energy sector. Gilbert carefully demurred, suggesting that it was outside the scope of his study to tell the city where to build, but he did state the following:

My own opinion, but this is not an opinion based on expert research, is that you have a huge opportunity for developing lands for this kind of purpose between where we're sitting now [City Hall, 71 Main St. W. at Bay St.] and the harbour. I've walked around there, and around the harbour, and I'm just impressed by the opportunities for the kinds of industrial development that I'm talking about, which is very knowledge-intensive, very rich in small-scale activity.

He also suggested that in Hamilton, the tendency is for "putting the land first and then wondering how to fill the land with jobs. What I'm proposing is an alternative way of going about it, which is figuring out what you want to do and then after you've defined it a bit, what the lands are."

As it is, Hamilton already has plenty of highway-accessible greenfield employment lands, but they too often end up [rezoned for yet more residential development](#) while we wait for some corporate white knight to relocate here.

Aerotropolis Prospects

Meanwhile, John Kasarda still believes aerotropolis has good long-term prospects. When I asked him about the effects of rising oil prices, he responded that aviation "is a structural process with its forecasted growth not likely reversed in the longer-term through even higher oil prices than present."

He notes that the industry survived the oil crises of the 1970s. Yet those crises were political in origin, and today's crisis is geological: half the oil is gone, the easy-to-reach half.

If last summer's prices were merely speculative, we should have seen inventories build up, but even though North American motoring actually declined last year for the first time in decades, supply could still barely match demand. It was not until demand collapsed well below its pre-recession peak that prices fell in turn.

Even now, oil futures are trading at or near \$60 per barrel. This may seem cheap compared to the super-spike a year ago, but recall that in 1999, during a long economic growth period, oil prices were trading in the \$15-20 per barrel range. Today's prices are more than triple the previously-assumed baseline price, despite a deep, sharp global recession.

Turning Crisis into Opportunity

Gilbert saw the looming crisis as an opportunity for Hamilton to [grow its economy around energy conservation and production](#): retrofitting buildings, expanding wind, solar and micro-hydro power, transforming our transportation system to run on electricity, and revitalizing our underused built environment.

A citywide commitment and a little imagination could make Hamilton an energy leader, building expertise and attracting the most talented engineers, innovators, investors and entrepreneurs in a positive feedback loop of growth - even as we insulate our own economy from energy price volatility.

Instead, status quo thinking paralyzes us. AEGD supporters insist that businesses around the airport [need not be airport-related](#) - but if not, there's no particular reason they have to be around the airport.

Hamilton already has greenfield business parks with highway access that sit empty until residential or big box commercial developers buy them out. Even the employment lands next to McMaster Innovation Park have been [under threat](#) from a big box developer.)

There are some positive signs: planned light rail lines running from McMaster to Eastgate Square and from the waterfront to Upper James; a restored Lister Block; and a steady trickle of new downtown developments, among other highlights.

These opportunities have the best long-term prospects: not warehouses in the middle of nowhere, but a dense, healthy downtown that mixes uses, welcomes artists, leverages the university and college, and brings creative people together to solve problems and create lasting value.

Ryan McGreal, the editor of *Raise the Hammer*, lives in Hamilton with his family and works as a programmer and writer. Ryan volunteers with [Hamilton Light Rail](#), a citizen group dedicated to bringing light rail transit to Hamilton. He is also the city editor for *H Magazine*. Several of his essays have been published in the *Hamilton Spectator*.