

## Inching towards sustainability, striding towards sprawl

### An Ecology Ottawa response to the City of Ottawa draft Official Plan amendments and supporting documents

#### *Overview*

The proposed amendments to the City of Ottawa's Official Plan and supporting documents like the Residential Land Strategy are full of good vision statements about the direction the city should be going in. They emphasise dense, walkable neighbourhoods, organizing planning and residential development around transit corridors, aiming to preserve green spaces and the rural areas around the city. These are goals that Ecology Ottawa supports very strongly and, if reached, would enable Ottawa to become a genuine leader in sustainable urban development. Getting it right in a plan such as this is crucial; the investments in buildings and infrastructure made under this plan will have social and environmental impacts over several generations.

But the devil, as always, is in the detail. And here, the draft Official Plan comes up very short indeed. Its particular goals for increasing density in the city and protecting green spaces are woefully short of what is needed. And these goals are in practice undermined by the city's unwillingness to challenge what is business-as-usual development policy – making available large amounts of undeveloped (“greenfield”) land available for low-density, car-oriented development. This must be fundamentally opposed. For Ottawa to become a leader, it must really follow through on the principles of ‘smart growth’ that it claims to be aiming for. In short, it can talk the talk but is not yet walking the walk.

#### *Ecology Ottawa recommendations*

Ecology Ottawa recommends, as a minimum, the following changes to the Official Plan:

- **The key target should be density, not intensification.** This is what is needed to create walkable environments and viable transit across the whole city, as well as protect the greenbelt. The city's residential land strategy makes this clear, and we know it more generally. The city's current overall population density is 17 people per hectare,<sup>1</sup> placing it near the bottom of a table of the 125 largest cities in the world in terms of population density (nearly half the density of Los Angeles, for comparison) (See Appendix I). The plan should be reorganised to aim for an **overall population density of at least 50 people per hectare in the built-up area of the city**, which would easily accommodate the projected population growth without expanding the built-up area. This should be accompanied by a

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<sup>1</sup> This is for Ottawa/Hull combined, admittedly, but the two are not drastically different in spatial structure.

- target of **400 people or jobs per hectare** in the **major mixed-use centres and arterial mainstreets** identified by the City.<sup>2</sup>
- New suburban developments on “greenfield” (previously undeveloped) land should be required to meet a *minimum* of around 40 units per hectare, such as has been pursued with success by Surrey, BC., in the East Clayton neighbourhood (See Appendix I for more on this).
  - **Firm policies and zoning regulation changes to make targets achievable.** Any targets adopted by the city will, of course, be meaningless unless the city takes action to ensure that development on the ground meets the standards set by those targets. Throughout the proposed OP amendment there are references to zoning regulation changes (e.g., minimum density requirements) and making minimum density levels a condition of approval for community design plans, greenfield developments, etc. Ecology Ottawa believes these have to be developed clearly and quickly, and rigorously enforced.
  - **The urban boundary should not be expanded.** In addition, there should be *no* building on greenfield sites at all until the overall density of the city has reached levels which achieve the walkable, transit city that the plan claims to be aiming for. In other words, the intensification target should be more or less 100%. If the aim is to be a leader in sustainable urban development, then there is no reason to permit any sprawl at all. Only with a very clear signal such as this will developers get the message.
  - **The exception should be for planning for a small amount of rural building.** This should be a maximum of 1% of the overall number of buildings, and should only be for the building of new farms to contribute to local food security, or for businesses serving this rural agricultural development.
  - The City should **work quickly with other landowners, particularly the federal government, to free up land** for development within the City, especially near key transit nodes.
  - The City should **advocate that the provincial government require all new buildings to meet LEED standards** and bring existing large buildings up to this standard. The City should also **petition the province to instate the so-called ‘Merton rule’**, which in South London requires all new buildings to generate 10% of their energy needs from renewable sources on-site, and develop a planning rule to make all residential developments zero-carbon by 2015.<sup>3</sup>
  - The City should revise the projected proportions of building by housing type accordingly, aiming in particular for substantial shifts from single family housing to row housing.

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<sup>2</sup> See Ecology Ottawa, *Minimum density targets and zoning changes to control sprawl*, Ottawa, June 2008, for more details.

<sup>3</sup> The rule was initiated by Merton Borough Council in South London, UK, in 2003, and is now being copied by many municipalities around the world. See <http://www.merton.gov.uk/living/planning/planningpolicy/mertonrule.htm>.

## ***Discussion***

### **Promoting sprawl**

While talking about ending sprawl, the Council's document in fact promotes it.

- City staff have proposed adding 850 hectares to the urban area, the area inside which the city will supply infrastructure like piped water and sewers (and therefore where developers end up building new subdivisions). This would be the second biggest addition to the urban area over the past two decades. Yet there are still well over 10 years of land sufficient to meet residential growth inside the current urban area, according to the city's own projections.
- An urban area expansion is not at all consistent with the "smart growth" principles referred to in the Official Plan. Ottawa's urban area has reached nowhere near the density level that is possible, or indeed optimal. For just one comparison, Ottawa's inside-the greenbelt population of about 700,000 residents is scattered over 185 square kilometre of land, whereas the 158-square-kilometres main island of the City of Montreal houses a population of 1,700,000.
- Building on any of the areas that have been identified as candidates for this new urban land would involve clearing tree cover as well as putting development next to agricultural lands and/or environmentally sensitive areas.
- The proposed changes would aim for 9% of all new housing to be built in rural areas. It is not explained why any rural development should be permitted. No justification is given for this figure – it is simply extrapolated from the figure for the recent past. To make the point more clearly, this is 13,000 houses in rural land areas – about 4 new towns the size of Manotick.
- Another 51% of new housing will be on greenfield sites outside the existing built-up area. We shouldn't be fooled by the proposal to expand the 'urban boundary'. The council refers to this term to mean the areas currently zoned for residential development and thus where they are committed to providing the infrastructure – sewers, water, etc. Much of this is currently farm or woodland. This is where over half of the houses will be built under a plan allegedly designed to 'end sprawl'. Again, this figure is largely an extrapolation from the past rather than part of a plan designed to achieve council's smart growth goals.
- The proposal to expand the urban boundary will simply extend the area over which this problem will occur. This is disastrous environmentally, but is also completely unnecessary.

### **Weak density & intensification targets**

The province requires the city to adopt targets for intensification, which refers to the proportion of new dwellings that have to be built within the existing built-up area (through infill, re-development, or building on brownfield or wasteground sites). It also requires the city to adopt targets for the density of building across the city.

- The proposed **intensification target** for the urban area is 36% for the 2006-2011 period and 40% for the 2012-2021 period. In the recent past (2001-2006) the

actual rate of intensification is 36%, so this is hardly a proposal for radical change. The proposed changes would allow fully 60% of new housing to be built on greenfield sites. The city’s residential land strategy document states clearly (section 3.3.3, p. 50) that the ‘intensification potential exceeds the 40% city-wide target.

- Intensification targets adopted by other cities seeking to limit sprawl tend to be much higher than this one being proposed for Ottawa. Vancouver, for example, is aiming for a 70% intensification rate. According to a report that was prepared for the government of Ontario to assess the adequacy of its density targets for the Greater Golden Horseshoe area, “Other jurisdictions in Canada, the UK, and Australia aim for 60-80% intensification.”<sup>4</sup>

- As the residential land strategy states, it is increasing density that is key to achieving the vision that council sets out. In Ottawa’s proposed OP amendment, There are **density targets** only for specific areas of the city, as in the table produced here. And apart from the downtown core, these only envisage densities which are around the minimum necessary for a thriving transit-based system. The rest of the city (including the new builds on greenfield sites) would remain low-density and car-based. The plan proposes to require densities of 32 units per hectare in new suburban developments. This will not be sufficient to create transit-oriented suburbs (see Appendix on density).

Density targets in the Plan amendments		
	Status quo	Proposed target
<b>City-wide intensification rate</b>	36% (2001-2006)	36% (2006-2011) 40% (2012-2021)
<b>Density* in central area</b>	395	500 (by 2031)
<b>Density in major mixed-use centres</b>	9-207	250
<b>Density along arterial mainstreets</b>	7-217	120-200
<b>Density of suburban town centres</b>	11-48	120
<b>Greenfield developments outside greenbelt</b>	19-20 units/hectare	32 units/hectare
* All densities are measured in people and jobs per hectare, except where indicated.		

- Under the proposed amendment, the **city would only seek to reach these density targets by 2031**. Given the urgency and scale of the climate crisis, this timeline strikes us as far too unambitious.
- Cities with vibrant transit systems and walkable neighbourhoods have overall densities of at least 35-40 people per hectare, preferably more like 50. Another way of saying why this is important is that cities with 50 people per hectare tend

<sup>4</sup> Urban Strategies Inc. *Application of a Land-Use Intensification Target for the Greater Golden Horseshoe*. 2005. p. 2.

<http://www.mei.gov.on.ca/english/pdf/infrastructure/intensificationtargetforggh.pdf>.

to consume between 67% and 80% less fuel than those who live in a city with Ottawa’s density. (See Appendix for sources for these figures).

- The city is too timid in its estimates of the **speed with which land in the city can be made available**, especially around the key transit nodes. For example, both for Hurdman and Confederation Park, both Transitway/LRT stations with significant amounts of unused land around them and thus perfect spots for aggressive residential developments, the development is proposed to be delayed until 2031, because of ownership problems. In the latter case, the land is federal government. But elsewhere (residential land strategy, section 3.6) it says that 17.6% of recent intensification building has been on land sold by the federal government. The council should work closely with the federal government to free up land for housing around those nodes – there should be no need to wait until 2031.

- The city only envisages very **small modifications in the types of housing** to be built, with a focus on single-family homes on the one hand, and high-rise apartment blocks on the other (see table). The intensification and density targets are clearly intended to be met by simply building more high-rise apartments, which will not create more walkable neighbourhoods.

Proportions of buildings by housing type in the plan amendments, recent trends and preferred scenario <sup>5</sup>				
	Single	Semi	Row	Apt.
<b>1993-1997</b>	45%	3%	42%	10%
<b>1998-2002</b>	56%	5%	27%	12%
<b>2003-2007</b>	44%	6%	34%	17%
<b>2006-2031</b>	40%	5%	27%	28%
<b>Ecology Ottawa suggested figures</b>	25%	15%	40%	20%

These figures are presented as if they are simply ‘consumer choices’, whereas in fact they are the product of planning norms from earlier periods. The planning system should be much bolder concerning the density of buildings, more row houses and semis, fewer single family homes, and so on. At the bottom of the table, we suggest figures which are more consistent with the council’s ‘smart growth’ arguments.

- In general, the council’s document **simply meets the minimum requirements set out by the province** concerning intensification, density, housing type, and so on. There is no real leadership shown in terms of placing Ottawa ahead of the curve on these issues.

### Undermining environmental goals

In other contexts, the Council has set targets for various measures of environmental performance - to reduce energy or water consumption, to preserve or increase biodiversity, to reduce car use, for example. But many of the measures contained in the plan will make the city’s environmental performance considerably worse than it currently is.

<sup>5</sup> Source: City of Ottawa, *Residential Land Strategy for Ottawa, 2006-2031*, Ottawa, February 2009, p.13, figures 4 and 5.

- **Climate change** - The council committed itself in 2004 to reducing the City's greenhouse gas emissions (that is, of the city as a whole, not just the council's own operations) by 20% by 2012 from 1990 levels, as the City's effort to help Canada meet its Kyoto Protocol commitment. This is an ambitious goal – the city's total emissions increased by 5% between 1990 and 2004. But it is also only a first step in meeting the challenge of climate change – the city's emissions will need to be reduced by 80-90% over the next 50 years if it is to play its part. Nevertheless, it is clear that any official plan which envisages continued low-density development, as does this one, will only take the city's emissions in absolutely the opposite direction – upwards.
- **Food security** - The city has developed an excellent strategy of building relations with local farmers, supporting organisations like Just Food Ottawa and programmes like Savour Ottawa, and building farmers' markets, in order to promote local food production and distribution. These programs are very popular, as evidenced by the popularity of Lansdowne farmer's market, for example. The problem in local food production is not demand, but supply. But local farmers are already being squeezed out by suburban development; this housing plan further undermines local food production and security.
- **Economic costs** - Suburban developments are in effect subsidised by those living in the urban core – taking scarce financial resources away both from taxpayers but also from other projects that that money might be spent on. Houses inside the greenbelt pay on average \$1035 more in taxes than the cost of providing them services, while urban houses outside the greenbelt pay \$70 less than that cost, according to the city's consultants.<sup>6</sup>
- **Greener buildings** - There are several references throughout the Official Plan to the city's desire to increase the use of green building design features (e.g. solar orientation for energy conservation). But there is little indication of how this goal will be achieved in practice. The strategy, as far as we can tell, is limited to providing a sustainable design "checklist" to developers, with no requirement or incentive for developers to actually implement any of the design features listed. We have been unable to find in the draft Official Plan amendment documents any policy on incentives for green buildings such as conditional zoning and density bonuses, which city council agreed in January 2008 to investigate as part of the Official Plan Review.

## **Politics**

We of course recognise that the Council does not work in a political void. There is provincial legislation and policy which constrains it. The developers also have considerable power –both carrots it can offer to Council and sticks it can beat them with. They have taken the city to the Ontario Municipal Board to bully them before, and may

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<sup>6</sup> Hemson Consulting Ltd, *Comparative Municipal Fiscal Impact Analysis*, report prepared for the City of Ottawa, January 2009. See Appendix II for the full figures.

do so again.<sup>7</sup> This has clearly already affected the plan; the weak targets for where houses can be built clearly reflect the developers' preferences for building yet another subdivision on the edge of Kanata, Barrhaven, Manotick or Orleans. Furthermore, the influence of developers will also affect how the plan is implemented. But this is not a reason to claim the plan is aiming for increased density and meeting various goals for environmental quality and liveable cities, when it absolutely will not achieve these goals. Better to make it clear that a plan such as this is a developers' plan, not a plan for a liveable, green city.

The city should be ambitious in striving for far more sustainable urban development, and if the developers want to challenge that, we should at least make them do so in the open. The political context and the province's support for sustainability has also shifted (for example with the right to make zoning conditional on type of buildings and uses, the Green Energy Act), so we should not assume that developers will have the same success in challenging the city's plan through the OMB as they did in 2003. And Premier Dalton McGuinty has clearly stated his desire to change any provincial policies that have the effect of encouraging sprawl.<sup>8</sup> If the city can make a good case, they may now win. At least it's worth trying – this plan doesn't even try.

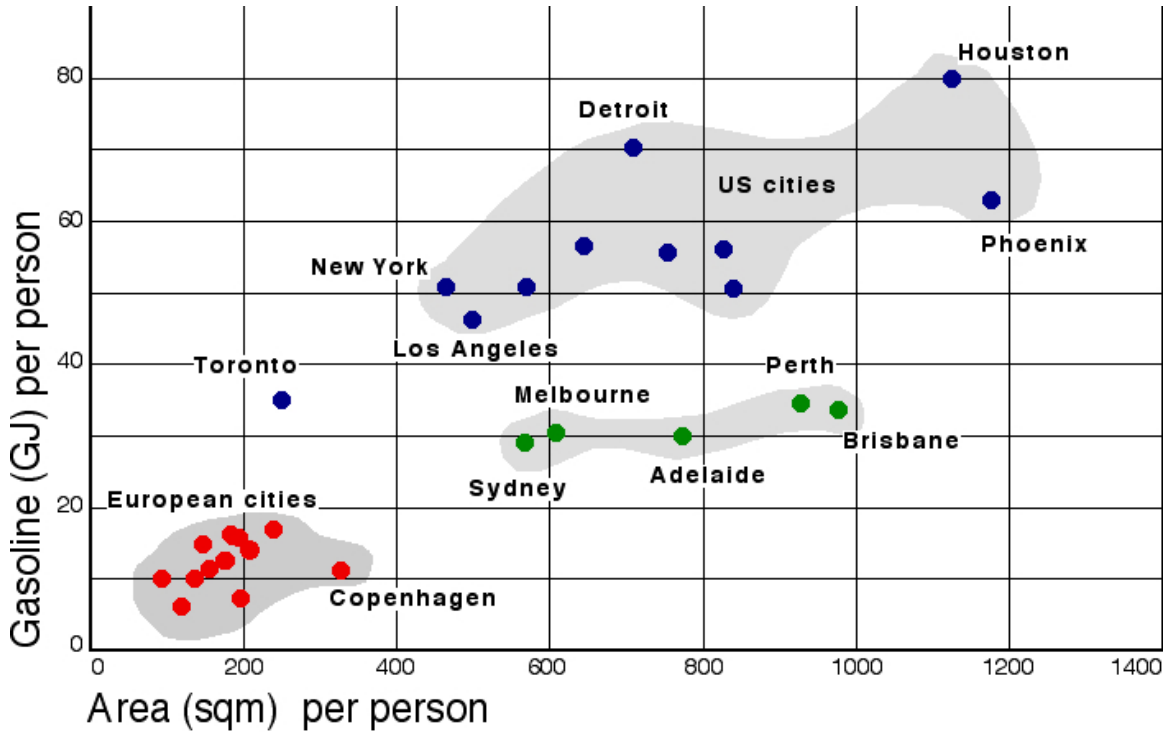
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<sup>7</sup> In 2005 the Ontario Municipal Board found in favour of a number of developers who appealed decisions by Ottawa City Council regarding planning applications. See Ontario Municipal Board Order No 2092, Decision date August 11 2005.

<sup>8</sup> Lee Greenberg, 'Province set to help curb urban sprawl, McGuinty says', *Ottawa Citizen*, February 4, 2009.

## Appendix I: Comparing Ottawa's Density to other cities

Achieving increased density is crucial to the success of any attempt to turn Ottawa into a sustainable city. Comparing with other cities is one way to show this.



This figure shows that overall energy consumption declines dramatically with population density in cities. It has Toronto on it but not Ottawa. It is the basis for the claim in the text about cities with around 50 people per hectare (which becomes 200 sq m per person – 1 hectare = 10000 sq m) consume 67-80% less fuel than those with Ottawa's density levels. Ottawa's figure of 17 people per hectare (calculated from the table below) puts it at 580 sq m per person, so around the same as Sydney or the US city above it (not named).

The table attached below gives overall density figures for the largest 125 cities in the world that does include Ottawa.<sup>9</sup> It shows Ottawa is one of the lowest density cities in the

<sup>9</sup> The measure of city size is by land area. This may explain certain anomalies, such as New York's relatively low density. It is not clear from the table whether it applies to the Ottawa City area after amalgamation (plus Hull/Gatineau) or just the built-up area of the two cities. If the former, this will affect the overall figure for Ottawa/Hull as it must do for New York, since amalgamation was designed to include a large rural area in the city boundary. The precise figures need to be treated with caution, thus, but the overall lesson – the need to focus on density – remains an important one.

world. It also shows that cities known to be transit and walking-oriented tend to have densities of the order of 3 times the density of Ottawa.

The city's residential land strategy doesn't give an overall figure for the city's density as a whole, just for specific areas (both actual and targets). It also measures density differently than this table – population plus jobs, as opposed to just population. But it does give one or two figures just for population density – figure 28 on p. 47 for example. This gives the population density of the Central core (the densest part of the city) at  $8147/268 = 30$  people per hectare. (100 hectares = 1 sq km). So this makes *the city core* about as dense as the *whole* of Stuttgart or Dublin – these are not even in the top half of the table. The target is in effect for a 25% increase in density by 2031 in the downtown core. This target figure doesn't split into jobs and people, so is not directly comparable, but we could extrapolate this to a 38 people per hectare figure perhaps, or 3800 people per sq km – up to level of the whole of Birmingham.

It's hard to see how the plan as a whole would move the city up this table much (ignoring the fact that other cities may also be densifying at the same time). The core and certain nodes will, but not the city as a whole. But clearly the density targets need to be radically revised upwards. We should be aiming at least for the densities of a city like Barcelona in the core and the transit key nodes.

Barcelona is around 50 people per hectare, the council's target gets to around 38 for the core, and 15-19 for key transit nodes like Lees, Hurdman, Tunney's Quad, Bayview-Preston, or Confederation Park. These should all be revised upwards to beyond the Barcelona figure in order to get the city as a whole to that sort of a figure – to around 100 people per hectare. This entails building approximately 40 units per hectare, easily possible with row housing and some low-rise apartment buildings.<sup>10</sup> This is the density produced in East Clayton in Surrey BC, which in fact includes significant amounts of single-family housing. This would certainly mean the urban boundary would not need to be expanded, and would enable a serious focus on not building on greenfield sites.

Finally, many of those cities with much higher densities do so on the basis of row housing not apartments, and where there are apartments, there is relatively little high rise. Paris has no buildings over 8 stories apart from the Eiffel Tower and has twice the density of Ottawa. The city's strategy is premised on a switch entirely to apartment blocks. But the 'new urbanism' approach they claim to be basing their plan on is more consistent with combinations of row housing and low-rise (4-8 storey) apartment blocks (think Amsterdam, Milan, or Stockholm). New urbanism entails both an aesthetic dimension – the relationship between open space and building height – and a question of 'liveability'. In fact neighbourhoods based on high-rise are not necessarily any more walkable than suburban sprawl. You can be just as isolated on the 20<sup>th</sup> floor of a tower block as in a sprawling suburb, and local services don't necessarily benefit from the

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<sup>10</sup> The council is already planning to mandate 26 units per hectare in the new greenfield suburban developments.

density (you just head to the basement car park and drive out). The council's plan has a systematic bias against row housing which should be revised.

**Largest cities in the world ranked by population density (1 to 125)**

Source: CityMayors.com

Rank	City / Urban area Country	Population	Land area (in sqKm)	Density (people per sqKm)
1	Mumbai India	14,350,000	484	29,650
2	Kolkata India	12,700,000	531	23,900
3	Karachi Pakistan	9,800,000	518	18,900
4	Lagos Nigeria	13,400,000	738	18,150
5	Shenzhen China	8,000,000	466	17,150
6	Seoul/Incheon South Korea	17,500,000	1,049	16,700
7	Taipei Taiwan	5,700,000	376	15,200
8	Chennai India	5,950,000	414	14,350
9	Bogota Colombia	7,000,000	518	13,500
10	Shanghai China	10,000,000	746	13,400
11	Lima Peru	7,000,000	596	11,750
12	Beijing China	8,614,000	748	11,500
13	Delhi India	14,300,000	1,295	11,050
14	Kinshasa Congo	5,000,000	469	10,650
15	Manila Philippines	14,750,000	1,399	10,550
16	Tehran Iran	7,250,000	686	10,550
17	Jakarta Indonesia	14,250,000	1,360	10,500
18	Tianjin China	4,750,000	453	10,500
19	Bangalore India	5,400,000	534	10,100
20	Ho Chi Minh City Vietnam	4,900,000	518	9,450
21	Cairo Egypt	12,200,000	1,295	9,400
22	Baghdad Iraq	5,500,000	596	9,250
23	Shenyang China	4,200,000	453	9,250
24	Hyderabad India	5,300,000	583	9,100
25	Sao Paulo Brazil	17,700,000	1,968	9,000
26	St Petersburg Russia	5,300,000	622	8,550
27	Mexico City Mexico	17,400,000	2,072	8,400
28	Santiago Chile	5,425,000	648	8,400
29	Singapore Singapore	4,000,000	479	8,350
30	Lahore Pakistan	5,100,000	622	8,200
31	Recife Brazil	3,025,000	376	8,050
32	Istanbul Turkey	9,000,000	1,166	7,700
33	Dalian China	2,750,000	389	7,100
34	Khartoum Sudan	4,000,000	583	6,850
35	Rio de Janeiro Brazil	10,800,000	1,580	6,850

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36	Monterey Mexico	3,200,000	479	6,700
37	Bangkok Thailand	6,500,000	1,010	6,450
38	Osaka/Kobe/Kyoto Japan	16,425,000	2,564	6,400
39	Guadalajara Mexico	3,500,000	596	5,900
40	Athens Greece	3,685,000	684	5,400
41	Ankara Turkey	3,100,000	583	5,300
42	Madrid Spain	4,900,000	945	5,200
43	London UK	8,278,000	1,623	5,100
44	Tel Aviv Israel	2,300,000	453	5,050
45	Sapporo Japan	2,075,000	414	5,000
46	Buenos Aires Argentina	11,200,000	2,266	4,950
47	Moscow Russia	10,500,000	2,150	4,900
48	Barcelona Spain	3,900,000	803	4,850
49	Porto Alegre Brazil	2,800,000	583	4,800
50	Tokyo/Yokohama Japan	33,200,000	6,993	4,750
51	Belo Horizonte Brazil	4,000,000	868	4,600
52	Fortaleza Brazil	2,650,000	583	4,550
53	Warsaw Poland	2,000,000	466	4,300
54	Tashkent Uzbekistan	2,200,000	531	4,150
55	Naples Italy	2,400,000	583	4,100
56	Katowice Poland	2,200,000	544	4,050
57	Leeds/Bradford UK	1,499,000	370	4,050
58	Manchester UK	2,245,000	558	4,000
59	CapeTown South Africa	2,700,000	686	3,950
60	Fukuoka Japan	2,150,000	544	3,950
61	Taichung Taiwan	2,000,000	510	3,900
62	Baku/Sumqayit Azerbaijan	2,100,000	544	3,850
63	Curitiba Brazil	2,500,000	648	3,850
64	Birmingham UK	2,284,000	600	3,800
65	Berlin Germany	3,675,000	984	3,750
66	Riyadh Saudi Arabia	4,000,000	1,101	3,650
67	Campinas Brazil	1,750,000	492	3,550
68	Jeddah Saudi Arabia	2,750,000	777	3,550
69	Paris France	9,645,000	2,723	3,550
70	Durban South Africa	2,900,000	829	3,500
71	Vienna Austria	1,550,000	453	3,400
72	Accra Ghana	1,500,000	453	3,300
73	Glasgow UK	1,200,000	368	3,250
74	Nagoya Japan	9,000,000	2,875	3,150
75	Quito Ecuador	1,500,000	479	3,150
76	Donetsk Ukraine	1,400,000	451	3,100
77	Goiania Brazil	1,475,000	479	3,100
78	Munich Germany	1,600,000	518	3,100
79	Stuttgart Germany	1,250,000	414	3,000
80	Dublin Ireland	1,075,000	365	2,950
81	Kuwait Kuwait	1,600,000	544	2,950

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<b>82</b>	Nizhni Novgorod Russia	1,500,000	505	2,950
<b>83</b>	Rome Italy	2,500,000	842	2,950
<b>84</b>	Phnom Phen Cambodia	1,500,000	518	2,900
<b>85</b>	Beirut Lebanon	1,800,000	648	2,800
<b>86</b>	Brasilia Brazil	1,625,000	583	2,800
<b>87</b>	Essen/Düsseldorf Germany	7,350,000	2,642	2,800
<b>88</b>	Lumumbashi Congo	1,200,000	427	2,800
<b>89</b>	Kuala Lumpur Malaysia	4,400,000	1,606	2,750
<b>90</b>	Los Angeles USA	11,789,000	4,320	2,750
<b>91</b>	Milan Italy	4,250,000	1,554	2,750
<b>92</b>	Pretoria South Africa	1,850,000	673	2,750
<b>93</b>	Stockholm Sweden	1,400,000	518	2,700
<b>94</b>	Turin Italy	1,350,000	500	2,700
<b>95</b>	Dubai UAE	1,900,000	712	2,650
<b>96</b>	Porto Portugal	1,035,000	389	2,650
<b>97</b>	Toronto Canada	4,367,000	1,655	2,650
<b>98</b>	Budapest Hungary	1,800,000	702	2,550
<b>99</b>	Lisbon Portugal	2,250,000	881	2,550
<b>100</b>	Johannesburg/East Rand South Africa	6,000,000	2,396	2,500
<b>101</b>	Rotterdam Netherlands	1,325,000	531	2,500
<b>102</b>	Harare Zimbabwe	1,750,000	712	2,450
<b>103</b>	Cologne/Bonn Germany	1,960,000	816	2,400
<b>104</b>	San Francisco/Oakland USA	3,229,000	1,365	2,350
<b>105</b>	Frankfurt Germany	2,260,000	984	2,300
<b>106</b>	Hamburg Germany	1,925,000	829	2,300
<b>107</b>	San Jose USA	1,538,000	674	2,300
<b>108</b>	Arabia Saudi	1,525,000	673	2,250
<b>109</b>	Brussels Belgium	1,570,000	712	2,200
<b>110</b>	Lille France	1,050,000	474	2,200
<b>111</b>	Helsinki Finland	1,000,000	479	2,100
<b>112</b>	Port Elizabeth South Africa	900,000	427	2,100
<b>113</b>	Sydney Australia	3,502,000	1,687	2,100
<b>114</b>	New York USA	17,800,000	8,683	2,050
<b>115</b>	Auckland New Zealand	1,050,000	531	2,000
<b>116</b>	New Orleans USA	1,009,000	512	1,950
<b>117</b>	Copenhagen Denmark	1,525,000	816	1,850
<b>118</b>	Montreal. Canada	3,216,000	1,740	1,850
<b>119</b>	Honolulu USA	718,000	399	1,800
<b>120</b>	Las Vegas USA	1,314,000	741	1,750
<b>121</b>	Miami USA	4,919,000	2,891	1,700
<b>122</b>	Ottawa/Hull Canada	828,000	490	1,700
<b>123</b>	Vancouver Canada	1,830,000	1,120	1,650
<b>124</b>	Antwerp Belgium	915,000	596	1,550
<b>125</b>	Denver USA	1,985,000	1,292	1,550

## **Appendix II – Costs of providing services across the City**

These are the full figures mentioned in the text (in the section on ‘undermining environmental goals’, subsection on economic costs). They show that those in houses outside the greenbelt just about pay for the services they receive from the city, while those in villages or rural areas are subsidised considerably. Meanwhile, within the greenbelt, taxpayers pay over \$1000 per household than they receive in services.

The source of these figures is a report commissioned by the Council in developing its official plan amendments. See Hemson Consulting Ltd, *Comparative Municipal Fiscal Impact Analysis*, report prepared for the City of Ottawa, January 2009.

Executive Summary Table				
ESTIMATED NET VARIANCE BETWEEN POTENTIAL EXPENDITURES & PROPERTY TAXES				
BY LOCATION				
	Urban		Rural	
	Inside Greenbelt	Outside Greenbelt	Villages	Scattered
Projected Expenditures Per Household	\$2,398	\$3,393	\$3,729	\$3,628
Projected Taxes Per Household	\$3,434	\$3,323	\$3,227	\$3,467
Difference per Household	\$1,035	(\$70)	(\$502)	(\$161)
Difference per Capita	\$452	(\$25)	(\$173)	(\$56)
Ratio of Tax : Expenditure	1:0.70	1:1.02	1:1.16	1:1.05