
DATE: September 29, 2008

SUBJECT: **HEALTH ASSESSMENT TOOL INITIATIVE TO PROVIDE QUANTIFIABLE COMMENT ON NEIGHBOURHOOD DEVELOPMENT PROPOSALS**

FROM: Janette Smith, Commissioner of Health Services
David L. Mowat, MBChB, MPH, FRCPC, Medical Officer of Health
Dan Labrecque, Acting Commissioner of Environment, Transportation and Planning Services

RECOMMENDATION

That Health Services and Environment, Transportation and Planning Services staff develop policy on the relationship between health and urban form for the Region's Official Plan and report back to Council with recommendations to create more health-promoting communities;

And further, that the Regional Chair write to the Ontario Ministers of Health and Long-Term Care, Health Promotion and Municipal Affairs and Housing asking for provincial legislation to increase the health-promoting potential of the built environment and to increase public and active transportation options;

And further, that subject to Council approval of the 2009 budget, the contract for Phase I be amended to include the development of the health assessment tool in the estimated amount of \$275,000 for a revised total commitment of \$519,000 (exclusive of applicable taxes);

And further, that this report be sent to the Cities of Brampton and Mississauga and the Town of Caledon.

HEALTH ASSESSMENT TOOL INITIATIVE TO PROVIDE QUANTIFIABLE COMMENT ON NEIGHBOURHOOD DEVELOPMENT PROPOSALS**REPORT HIGHLIGHTS**

- In 2005, Council directed Health Services and Environment, Transportation and Planning Services (ETPS) staff to work with the area municipalities to research and make recommendations for planning policies that create more health-promoting communities.
- Health Services staff were also directed to comment on any development applications that came to the Region.
- The Health Services comments that have been provided have been well received by the municipalities and requests have been made by the area municipalities to strengthen their effect.
- To increase the quality of the health services comments in an efficient manner, a Health Assessment Tool is being developed because a review of the literature revealed that no tool that can quantifiably comment on development applications currently exists in the literature or in practice in Canada.
- Phase 1 of the Health Assessment Tool project consists of combining data on land use design with data on health behaviours, travel patterns and health outcomes to develop a realistic data layer that depicts the existing walkability conditions of Peel neighbourhoods.
- Phase 2 involves converting the data-based walkability surface into a user-friendly model that can be used to assess development applications on their health impacts and propose alternate design plans that increase walkability and promote health.
- The Vendor for Phase 1, Lawrence Frank and Company Inc. has access to unique data that can be adapted to develop a model for Peel for Phase 2.
- Staff recommend that the contract with Lawrence Frank and Company Inc. be extended for one year (2009) to complete Phase 2 of this project contingent on Capital Budget approval.

DISCUSSION**1. Background**

In December 2005, Health Services and Environment, Transportation and Planning Services (ETPS) presented a joint report to Council on Obesity Prevention that highlighted the relationship between the built environment and chronic conditions such as diabetes, cardiovascular disease, and obesity. The report resulted in the following Council directions:

- That the Commissioners of Health Services and ETPS work with the three area municipalities to research and make recommendations for planning policies and processes that provide greater opportunities for active living in Peel;
- And further, that Health Services staff be requested to comment on any development applications that come into the Region for comment;
- And further, that the Regional Chair write to the Ontario Ministers of Health and Long-Term Care; Health Promotion; Transportation and Municipal Affairs and Housing to advocate for policies which strengthen public and active transportation options.

Research on the best application of Council direction to create healthier neighbourhoods in Peel led to the creation of several initiatives to foster healthy communities, as well as consultation with and the retention of key experts from the fields of land use planning, transportation, health and systems research.

HEALTH ASSESSMENT TOOL INITIATIVE TO PROVIDE QUANTIFIABLE COMMENT ON NEIGHBOURHOOD DEVELOPMENT PROPOSALS

These initiatives include:

- i) A thorough review of the current literature on health and urban form
- ii) Development of a position statement on the effects of the built environment on health endorsed by the Medical Officer of Health (Appendix I)
- iii) Development of a conceptual model visually depicting all the relationships between built environment and health outcomes
- iv) Participating in the Mississauga Public Health and Urban Form Committee
- v) Creation of an Active Transportation social marketing strategy for Peel
- vi) Provision of comments from a health perspective on municipal block plans
- vii) Review of the Regional Official Plan to determine a process to incorporate policy related to health and urban planning
- viii) Construction of an urban form Health Assessment Tool to quantifiably comment on neighbourhood development proposals.

The Health comments that have been provided have been well received by municipalities and Regional staff. Both groups have indicated a need to strengthen the effect of the health comments through more specific quantifiable assessment and recommendations. To increase the ability to provide evidence-informed comments in an efficient manner, a Health Assessment Tool is being developed.

2. Urban Form Health Assessment Tool

This project involves developing an urban form Health Assessment Tool to quantifiably comment on the health impacts of proposed development applications in Peel. No such tool currently exists in the literature or in practice in Canada. This Health Assessment Tool is to model Environmental Impact Assessments routinely used in the Planning field to identify the adverse and consequential environmental impacts of land use planning proposals. To investigate the feasibility of developing a health assessment tool, Phase 1 work has been done to combine data on land use design with data on health behaviours, travel patterns and health outcomes to develop a realistic data layer that depicts the existing walkability conditions of Peel neighbourhoods. This walkability surface is being created with data available at the postal code level so that neighbourhoods can then be compared on their varying amounts of urban form elements and their concurrent health outcomes for each postal code area. For the first phase of this project, extensive data from Peel and Toronto has been gathered and consolidated through the cooperation of regional, municipal and City of Toronto staff (Appendix II). Data on Toronto neighbourhoods will be used as a comparison data set when determining the walkability of Peel.

Simultaneously, collaborations are being established with staff in ETPS, the area municipalities and developers to formalize the process of considering the health impacts of land use planning through the use of this Tool. Regular updates have been provided to staff in ETPS and Health through Stakeholder workshops with the researchers leading the project. Presentations have also been made to the Building Industry Liaison Team which includes developers and the Regional and Area Municipal Planning Group which includes management staff from area municipalities and the Region.

In order to develop the conceptual approach to model development of the Health Assessment Tool, the researchers at Lawrence Frank and Company, a Vendor secured for the first phase of the project, have also consulted with experts from the fields of health, transportation and urban design across North America, including:

HEALTH ASSESSMENT TOOL INITIATIVE TO PROVIDE QUANTIFIABLE COMMENT ON NEIGHBOURHOOD DEVELOPMENT PROPOSALS

- a) Dr. Rick Glazier, Senior Scientist at the Institute of Clinical and Evaluative Sciences
- b) Eric Miller, Professor and Civil Engineer at the University of Toronto
- c) Dr. Gillian Booth, Clinician Scientist at the Institute of Clinical and Evaluative Sciences
- d) Dr. John Spence, Associate Professor at the University of Alberta
- e) Gordon Garry, Director of Research and Analysis at the Sacramento Area Council of Governments
- f) Dr. Karen Beazley, Director of Environmental Studies at Dalhousie University.

Based on consultation and feedback from these experts, Lawrence Frank and Company developed the methodological framework for the walkability surface and recommendations for the next phase of the project.

A specific request has also been made to develop measures for existing communities and infill or redevelopment situations. To address this request, the feasibility of developing guidance for existing communities will be investigated and considered as part of the final phase of this project.

3. Proposed Direction

Phase 2 of this project will convert the technical walkability surface into a user-friendly software model that can be used to assess development applications on their health impacts and propose alternate design plans that increase a community's "walkability" and its potential to allow residents to be physically active, consequently improving their health. At this stage it is understood that converting the technical walkability surface into a GIS-type software model is necessary to increase efficiency and utility of the Tool. A business case is being submitted to the Chief Information Officer. The estimated cost for the application development is approximately \$275,000. In addition, to ensure that the software is compatible with the regional information system as it is developed and launched, approximately \$110,000 will be budgeted in 2009 for licensing, installation, hardware, infrastructure and information technology support. The total cost for Phase 2 is estimated at \$385,000.

Phase 1 was successfully addressed by Lawrence Frank & Company Inc. who was engaged in the amount of \$244,000 through a direct negotiation being the only Vendor who has developed a similar scaled evidence-based tool that can assess an array of health impacts stemming from alternative approaches to land development. The Vendor is the owner of the formula and index used to develop the tool and as such significant savings in money and time were achieved by proceeding with the only known developed tool, and the widest published Vendor in the industry.

At the outset of Phase 1, the results and direction for Phase 2 were not known and were not considered as part of the initial contract engagement. Given the lack of some types of land use data that was identified in Phase 1, it is recommended that the contract with the vendor be continued for Phase 2 because of their access to unique data from other settings in the United States where they have performed similar work that can be leveraged to correct data shortages that have been encountered. Phase 2 would be initiated contingent on 2009 Capital budget approval of the additional funds.

HEALTH ASSESSMENT TOOL INITIATIVE TO PROVIDE QUANTIFIABLE COMMENT ON NEIGHBOURHOOD DEVELOPMENT PROPOSALS

Staff of Health Services, ETPS and the area municipalities will continue to work together on the use of the health assessment recommendations with the goal of creating more health-promoting communities. As previously directed by Regional Council, recommendations regarding policies and processes to support this goal will form future reports. Finally, advocacy for provincial legislation to support the goal of healthy urban form development is recommended.

FINANCIAL IMPLICATIONS

Funding of \$385,000 for Phase 2 of the Health Assessment Tool initiative will be included in the 2009 Capital Plan Public Health Information Improvement 09-5306 for Council's consideration. The 2009 Capital Plan will come forward to Council as part of the 2009 budget process.

HEALTH ASSESSMENT TOOL INITIATIVE TO PROVIDE QUANTIFIABLE COMMENT ON NEIGHBOURHOOD DEVELOPMENT PROPOSALS

CONCLUSION

There is growing recognition of the negative impacts of the built environment on population health. The creation of the Health Assessment Tool is the first of its kind health promotion strategy to quantifiably comment on the health impacts of development applications, suggest alternative design plans and improve the health-promoting potential of new developments in Peel. Such a tool has the potential to effect systems change by engaging multiple sectors to dramatically increase the health of thousands of Peel residents for many years.



Janette Smith
Commissioner of Health Services

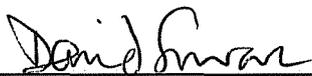


David L. Mowat, MBChB, MPH, FRCPC
Medical Officer of Health



Dan Labrecque
Acting Commissioner of Environment, Transportation and Planning Services

Approved for Submission:



D. Szwarc, Chief Administrative Officer

02 Oct 07/08

For further information regarding this report, please contact
Gayle Bursey at extension 2617 or via email at gayle.bursey@peelregion.ca

Authored By: Bhavna Sivanand

c. Legislative Services
 M.J. Macintyre, Director, Purchasing
Manager, Financial Support Unit (FSU)

HEALTH ASSESSMENT TOOL INITIATIVE TO PROVIDE QUANTIFIABLE COMMENT ON NEIGHBOURHOOD DEVELOPMENT PROPOSALS



PEEL HEALTH'S POSITION STATEMENT ON THE IMPACTS OF THE BUILT ENVIRONMENT ON PUBLIC HEALTH

The purpose of this statement is to formalize Peel Health's commitment to increase healthy neighbourhood development in the Region of Peel, thus helping to reduce the adverse effects of the built environment on the public's health.

Peel Health will provide leadership, advocacy and support for public health considerations to be integrated into future urban growth and development of Peel Region. Through this commitment, Peel health envisions the creation of vibrant and safe communities that prevent disease, promote health, and ultimately enhance quality of life for all residents.

BACKGROUND

There is a growing body of evidence that links the built environment to a range of public health concerns from physical inactivity, obesity, cardiovascular disease, diabetes, asthma and respiratory disease to isolation, mental illness, violence and social inequities. In addition, work has been done to isolate a few key design elements for their impact on health outcomes. These design elements include: mixed land use, street connectivity and residential density. Additional research findings show that:

- Urban sprawl leads to increased driving times, which contribute to poor air quality through carbon monoxide (CO), nitrogen oxide (NOx), volatile organic compounds (VOCs) and particulate matter (PM) emissions. NOx and VOCs emissions result in ground-level ozone, known as smog, which can lead to heart and lung conditions, hospital admissions and death.
- Sprawl is associated with higher automobile dependence and lower levels of physical activity, which can lead to obesity, diabetes and other chronic diseases. Studies have shown that the risk of obesity can decline by 4.8% for each additional kilometre walked per day and can increase by 6% for each additional hour spent in a car per day.
- Canadians living in major urban centres are twice as likely to walk, bike or use public transit to get to work compared to those living in the suburbs.
- Motorist and pedestrian injury rates are associated with environmental factors including road design and traffic congestion.
- Urban sprawl and increased automobile dependency can lead to less community involvement and social isolation, which can lead to mental illness. Social isolation and mental illness can also exacerbate other chronic diseases. Research has shown that every 10 additional minutes spent commuting is associated with a 10% drop in community involvement.
- Long commutes and driving in heavy traffic can lead to increased levels of stress, anxiety and road rage. This may have an immediate impact on work performance and a person's ability to cope with additional stressors, and affect overall mental health and quality of life in the long run.

Health Services

44 Peel Centre Dr., Brampton, ON L6T 4B5
Tel: 905-799-7700 www.peelregion.ca

HEALTH ASSESSMENT TOOL INITIATIVE TO PROVIDE QUANTIFIABLE COMMENT ON NEIGHBOURHOOD DEVELOPMENT PROPOSALS

THE ROLE OF PUBLIC HEALTH

Public Health has an integral role to play in mitigating the effects of the built environment on health outcomes. Local public health agencies can take the first steps by:

1. **Forging new partnerships** between public health, planning and transportation officials to bring health into the forefront of land use and transportation planning discussions
2. Serving as information conduits by **keeping abreast of current research** and disseminating information to key stakeholders and the community at large
3. **Building community support** for change by increasing awareness and knowledge about how the built environment is an important determinant of health
4. Providing support for and **participating in land use planning decisions**
5. **Advocating for policy development** that supports healthy community development

RECOMMENDATIONS AND CALLS TO ACTION

Peel Health strongly acknowledges the built environment as a significant determinant of health and endorses the following calls to action to improve the health and quality of life of its residents:

1. Encourage planning and transportation professionals to consider themselves as public health enablers and forge sustainable partnerships between departments of public health and planning;
2. Advance the field of research by developing a conceptual framework and tools to understand and measure the relationships between health and the built environment;
3. Advocate for land use planning to be seen as a health promotion strategy to decrease the burden of chronic disease;
4. Establish health as a priority area of concern and strengthen public health's support for healthy transportation and land use policies;
5. Integrate the concept of healthy and complete communities into Official Plans;
6. Support changes to zoning codes that facilitate mixed use land development at the neighbourhood level;
7. Formalize public health's role in providing feedback on municipal secondary and block plans, and establish a process for utilizing health assessment tools to measure the health-promoting potential of development applications;
8. Encourage balanced transportation planning that is designed around people rather than cars at the neighbourhood level.

**HEALTH ASSESSMENT TOOL INITIATIVE TO PROVIDE QUANTIFIABLE COMMENT ON
NEIGHBOURHOOD DEVELOPMENT PROPOSALS**

CONCLUSION

The linkages between health and the built environment are strong, and a large portion of the avoidable burden of chronic disease in Canada stems from this 'unnatural cause.' Effecting change in this area requires an amendment of historic trends in development coupled with creating a shift in social norms. Now more than ever, public health has a role to play in supporting planners and policy makers to increase the health-promoting potential of the built environment.

Place clearly matters and we are determined to build healthy, active communities for all our residents. Peel Health believes that the impact of where we live on our health is as pressing a public health issue as diet and infectious disease and strongly favours making the active choice the easy choice.

Signed,



David L. Mowat, MBChB, MPH, FRCPC
Medical Officer of Health
Region of Peel Public Health

HEALTH ASSESSMENT TOOL INITIATIVE TO PROVIDE QUANTIFIABLE COMMENT ON NEIGHBOURHOOD DEVELOPMENT PROPOSALS

Extensive data from Peel and Toronto has been analyzed to create built environment measures, as described in Table 1 and 2.

TABLE 1: DATA SUMMARY -- BASIS FOR URBAN FORM MEASURES

▪ Land Use Parcels	▪ Census Tracts, Blocks and Dissemination Areas	▪ Trails
▪ Roads	▪ Parks	▪ Building Footprints
▪ Postcodes	▪ Transit Data (Bus Stops)	▪ Building Square Footage
▪ Traffic Analysis Zone	▪ Sidewalks	▪ Aerial Photos

TABLE 2: BUILT ENVIRONMENT MEASURES – INDEPENDENT VARIABLES TO BE USED IN MODELING

MEASURE	DEFINITION	DATA SOURCES
Net Residential Density	Number of residential units divided by area in residential use	Parcel data provided housing unit count and land area.
Street Connectivity	a) Number of intersections (3-way or greater) per square kilometre. AND/OR b) Number of cul-de-sacs (dead ends) per square kilometre.	Street centerline file
Land use Mix – intensity	Evenness in the relative amount of land area for different uses. Example land use types include: - Multi-family residential - Single family residential - Retail - Office	Parcel files
Presence of specific land use	Presence within postal code buffers of different land use, e.g. retail and parks.	Parcel files
Transit availability	Number of bus stops within buffered postal codes. Divide by postal code area to create bus stop density measure.	As available
Presence of sidewalks	Percent of roads with sidewalks.	As available