

Mayor's Tower Renewal – City of Toronto Smog Summit



Mayor's
Tower Renewal

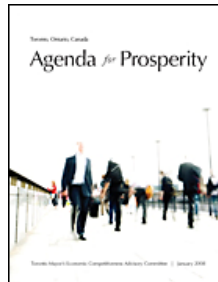
- Good Afternoon
- Its a great pleasure to be able to tell you about a program that the City of Toronto is undertaking
- It was directed by city council last September and it is Called Mayor's Tower Renewal



Mayor's Tower Renewal

Mayor's Tower Renewal is a program to drive broad environmental, social, economic, and cultural change by improving Toronto's concrete apartment towers and the neighbourhoods that surround them.

- The City is intending to achieve a broad range of benefits through this program.
- It 's implementation will achieve environmental benefits through reduced energy and water use and increased waste diversion.
- These benefits will be integrated with complimentary economic, social and cultural benefits.
- The focus of the program is Toronto's apartment towers and the neighbourhoods around them



Toronto Bike Plan



- The City of Toronto has been actively addressing climate change for over 20 years and has developed a full range of sustainability programs and objectives. Integrating and combining all of these initiatives forms the framework of what we want to achieve in Mayor's Tower Renewal.

Some examples of our initiatives are:

- **Transit City** Light Rail Plan that is an important initiative to build a 120-kilometre 8-line network of light rail lines that will revolutionize transit and transportation across Toronto. Its far-reaching lines will revitalize neighbourhoods, spur economic growth and clean the air we breathe.
- **Climate Change, Clean Air and Sustainable Energy Plan** is designed to encourage Torontonians to adopt more environmentally friendly lifestyles and reduce the energy required to heat, cool and light our buildings. It sets the following reduction targets for the Toronto area, based on a 1990 baseline:
 - 6% by 2012 (Kyoto target) – which we are on track to achieve;
 - 30% by 2020; and
 - 80% by 2050
- **Live Green Toronto** is the City of Toronto's one-stop resource for living environmentally friendly which our residents have enthusiastically adopted by providing hundreds of easy ways people can contribute to a healthier planet.
- **Target 70** is the program and initiatives needed to achieve 70% solid waste diversion from landfill.
- Toronto's **Agenda for Prosperity** is our blueprint for the Toronto economy which is on a culture of partnership with businesses while achieving our environmental goals.

Cutting emissions from City operations by 30 percent from 1990 levels by:

- Powering Toronto City Hall with renewable energy
- Switching to biodiesel, hybrid electric and natural gas-powered buses, cars and trucks
- Upgrading over 500 city facilities to be energy efficient
- Converting 2,000 traffic signals to LEDs

Live Green Toronto

Investing \$20 million to green Toronto's homes and businesses with innovative projects like shared geo-thermal systems and green roofs

Largest public transit expansion in North America

Transit City plan will add 120 km of modern light rail public transit



Toronto Green Standard

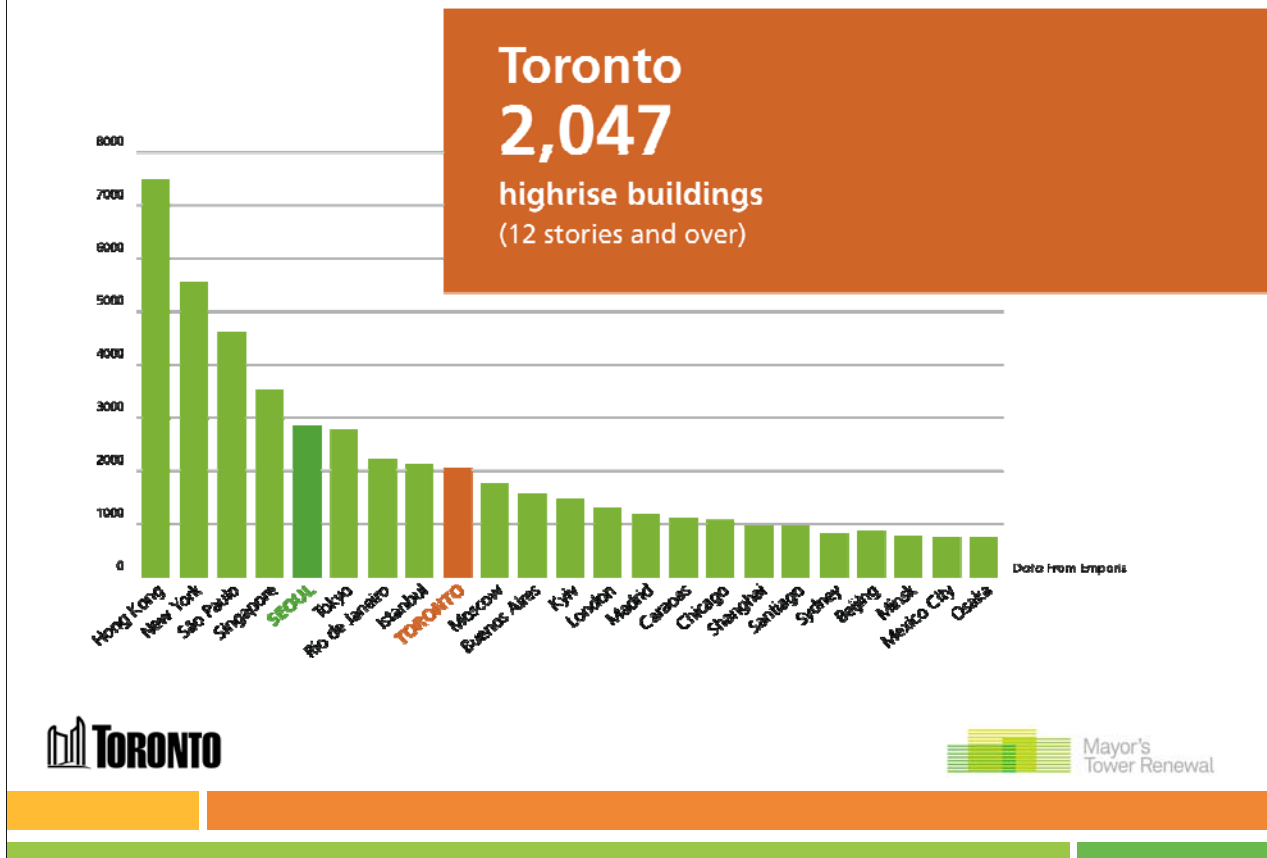
Our made-in-Toronto approach to designing environmentally friendly buildings

Deep Lake Cooling

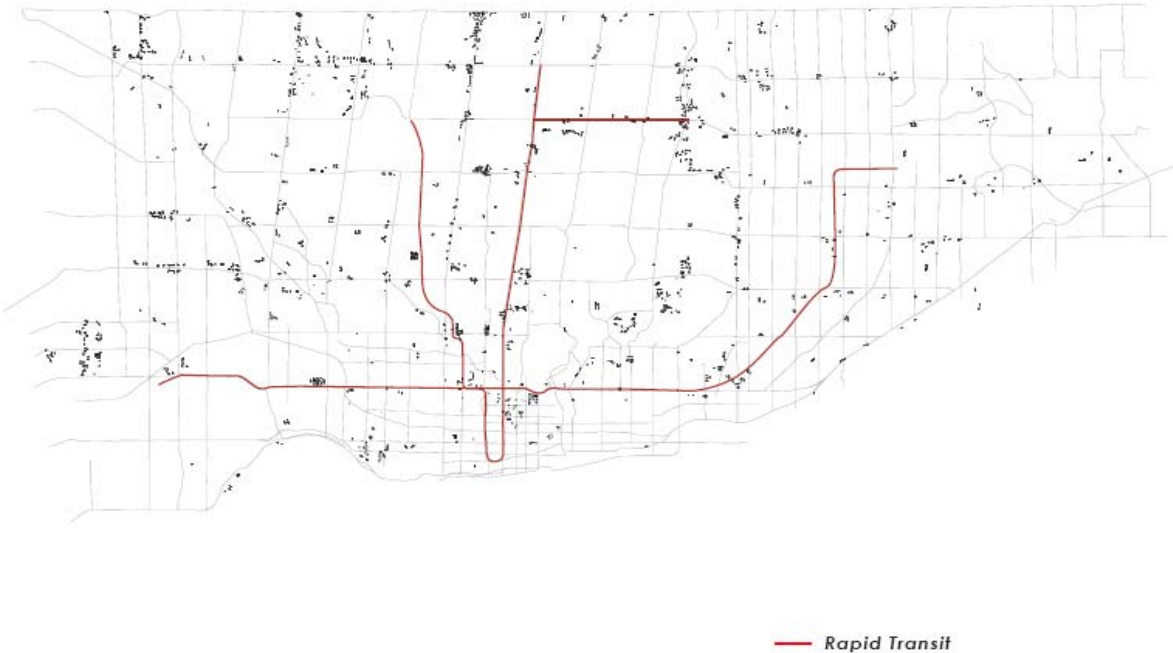
Cold lake water cuts downtown office tower energy use by 90 percent



- The City has applied these plans and objectives in many tangible ways
- Live Green Toronto focuses on homes and small businesses with incentive programs to assist owners in changing their buildings and their way of using the buildings to increase energy efficiency and support renewable energy
- Deep Lake water cooling is a significant infrastructure project to use the cool temperature of Lake Ontario water to cool downtown office buildings
- The Toronto Green standard sets out environmental performance criteria applied to new construction projects, including energy and water efficiency and waste diversion requirements
- Transit City will see 120 km of rapid transit added to the city's transportation system
- In particular the City identified a number of years ago that leading by example in our own operations would be important in overcoming barriers to having wide spread application of sustainable practices. So we have changed much of our fleet of vehicles, upgraded city facilities, installed renewable energy particularly solar PV, solar hot water and have a wind turbine. Geo exchange heating and cooling systems have also been used in a number of buildings.
- This has resulted in 30 % reduction in our greenhouse gas emissions.
- Which is terrific
- Now the challenge is to get others to follow that lead.



- In particular in Cities , buildings are the sources responsible for GHG emissions
- In Toronto, buildings account for over half of our emissions
- So we look to these sources for improvements
- Toronto's building stock is quite varied but there are a high number of apartment style buildings
- In north america we are second only to new york in the number of apartments
- And in the top 10 in the world
- So this style of building got our attention for opportunities for GHG reduction



- One other characteristic of Toronto is that the apartment towers are distributed throughout the city
- The black specks on this map are the locations of the towers
- This is interesting because when we look at improving the towers we are able to make changes throughout the city
- The red lines on this map are our current rapid transit system
- We have a very extensive bus network but the rapid transit lines we have now are not that well placed to serve the tower communities
- We know that the other big contributor to GHG is car use
- So improving public transit is critical to attacking that source



- The apartment towers of particular interest to us are those that were built in the 1960s and 70's
- There was a huge building boom at that time , larger than anything we've seen since
- Over 1000 towers were built
- Their concrete construction provides for very strong buildings, the buildings provide affordable rental housing and the units are sized to accommodate families
- This all adds up to the towers being a tremendous resource for the city
- The problem , or if you like, the opportunity , is that at the time matters such as energy efficiency were not important and the buildings have no insulation
- The towers are also approaching 50 years old so there are opportunities for state of good repair equipment and structural component replacement that can be leveraged in a comprehensive renewal project

- One of the other characteristics of the towers are that they are often located in clusters and there is lots of space around them
- So we can also leverage opportunities to look at what can be added to the neighbourhood to improve how it works as we start to look at groups of towers

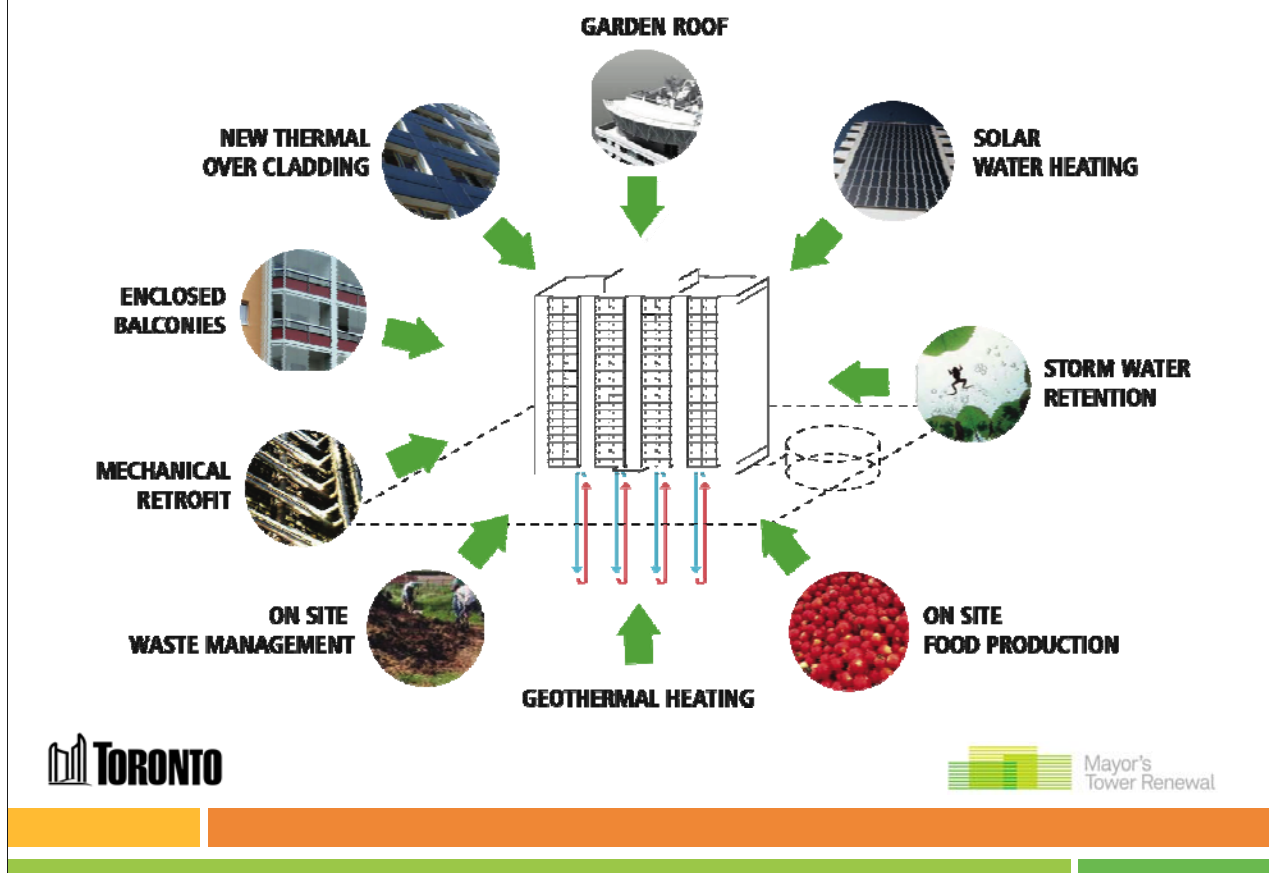


Mayor's Tower Renewal

Mayor's Tower Renewal provides us with the opportunity to drive change by achieving the combined and integrated results of:

- combating climate change, while stimulating local economic development;
- applying new and innovative green technologies and, very importantly,
- renewing, revitalizing, creating beautiful vibrant neighbourhoods across our city.

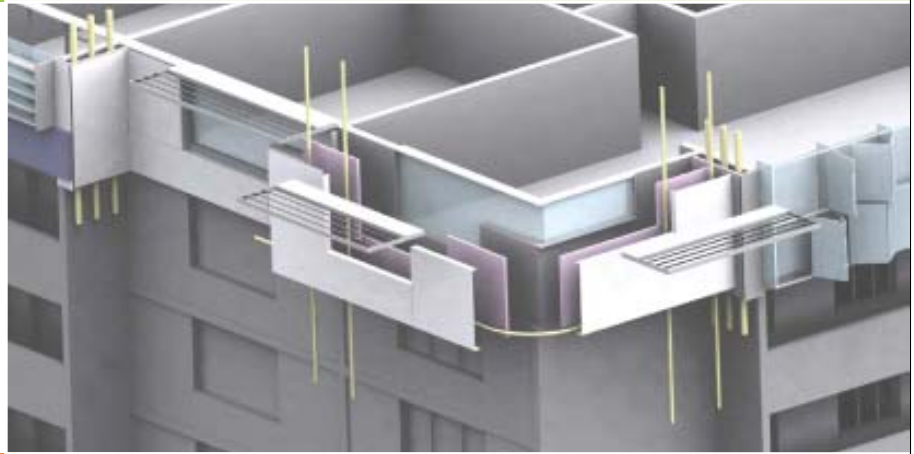
- So , Mayor's Tower Renewal is making changes to the buildings to improve their operating performance
- All of this work creates jobs that will in turn provide significant local spending and so generate economic stimulus
- We'll be trying to achieve high performance standards so new technologies will be used that will support new industries
- And we're linking it all to how all of the City's objectives, such as those I mentioned at the beginning of the presentation are applied



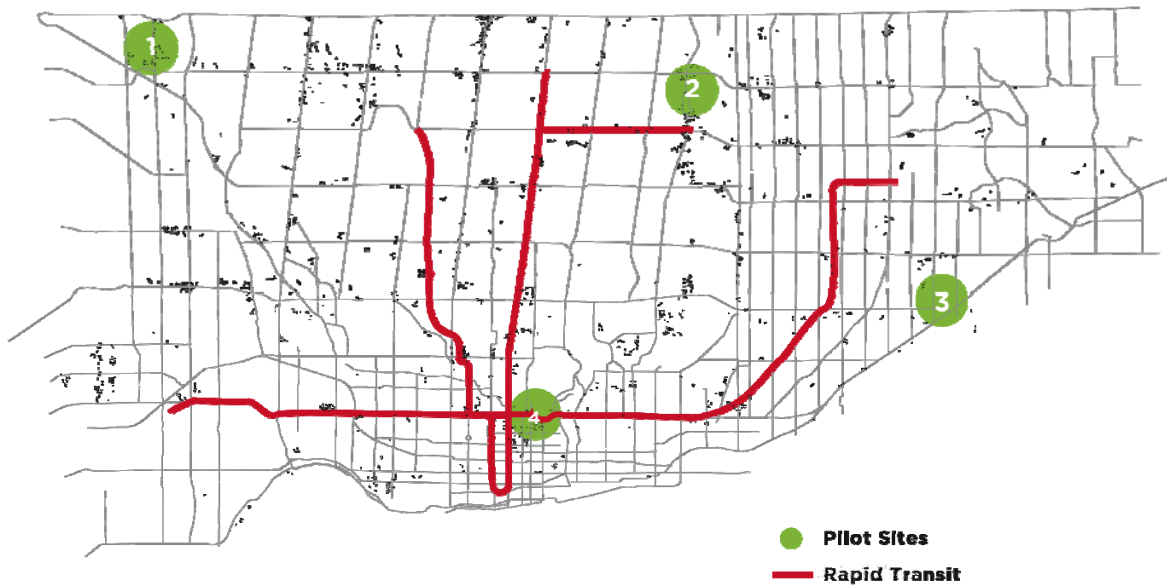
This diagram shows a schematic of the types of applications we're looking at

- Green roofs help keep the building cool and also help reduce storm water system loading
 - Solar water heating systems to replace fossil fuels
 - On site use of storm water assisted by retention facilities
 - The space around the sites can be used for food production
 - The heating system can be replaced with a geo exchange system to reduce the use of fossil fuels
 - Waste diversion by increasing recycling is a very important goal
 - Changing systems such as the lighting will also drive energy efficiency
 - And when we look at the envelop of the building , due in particular to the way the buildings were designed, proving insulation by covering the exterior walls, including the balconies, will result in the buildings using much less energy.
 - All of these activities in the Mayor's Tower Renewal Project will drive job creation and we're working with college and union programs , to incorporate training for green jobs into Tower Renewal.
 - These are the types of measures we would expect to see in a new buildings
- Basically think of the process as making the Tower buildings as good as new

Structural retrofit can provide opportunities for multiple system upgrades



- In particular when we provide a new outer coat to the buildings this provides many opportunities to change out and add systems to the building.
- We can add servicing on the exterior of the existing structure, so that residents can remain in their apartments while the work is taking place.
- We have underway a very comprehensive report on guidelines for building recladding being carried out by the University of Toronto faculty of architecture
- that will address appropriate construction techniques to maximize opportunities and ensure a sound result
- It is the improvements to building operations that drives the economics of tower renewal
- The building renewal will be driven by savings on utilities: energy, water and waste disposal costs. The estimated cost of replacing a 20-story tower apartment is between \$50 and \$60 million. Retrofitting a building is a small fraction of that



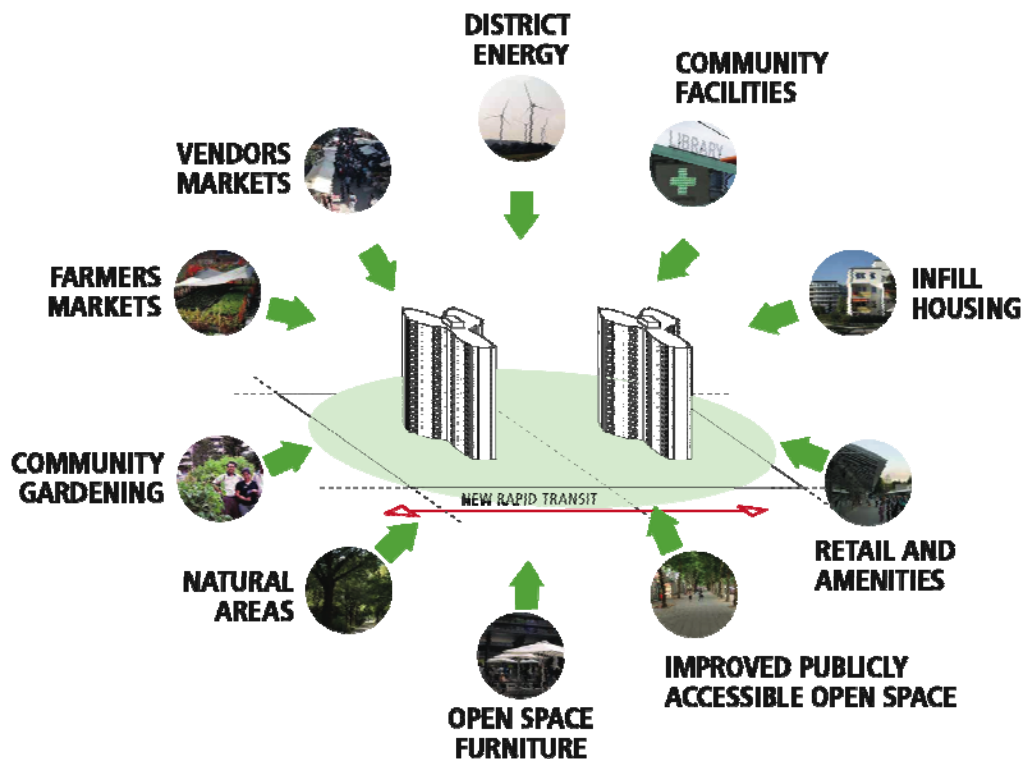
- we are underway with pilot projects at 4 sites
- We're starting with four pilot sites, chosen to demonstrate the potential of city-wide renewal
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- Three of the sites are owned by private companies and one site is owned by the City.
- City Council has directed that we report back by the end of 2010
- on the lessons that have been learned at the pilot sites and on a roll out strategy to all neighbourhoods in toronto



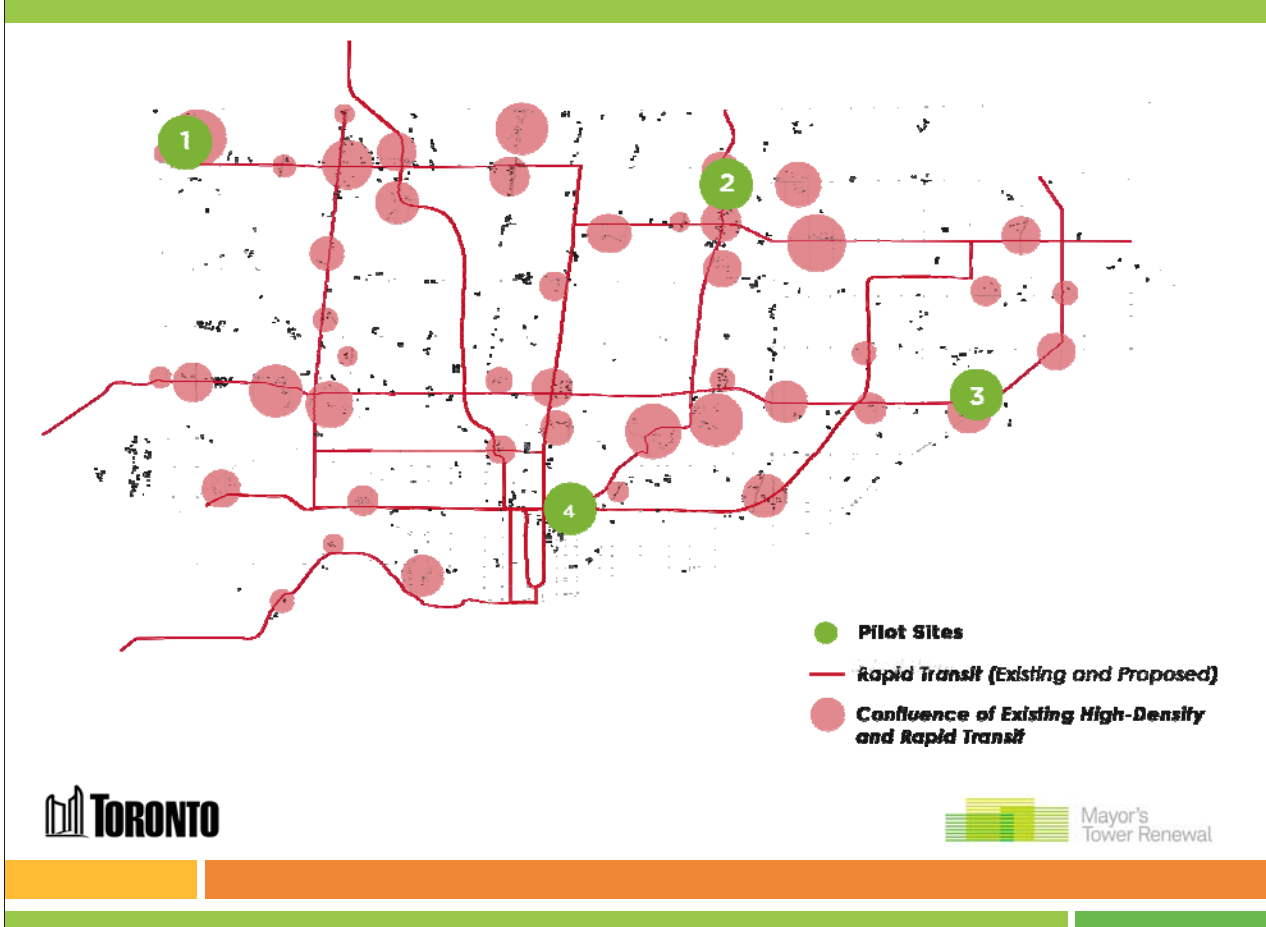
 **TORONTO**

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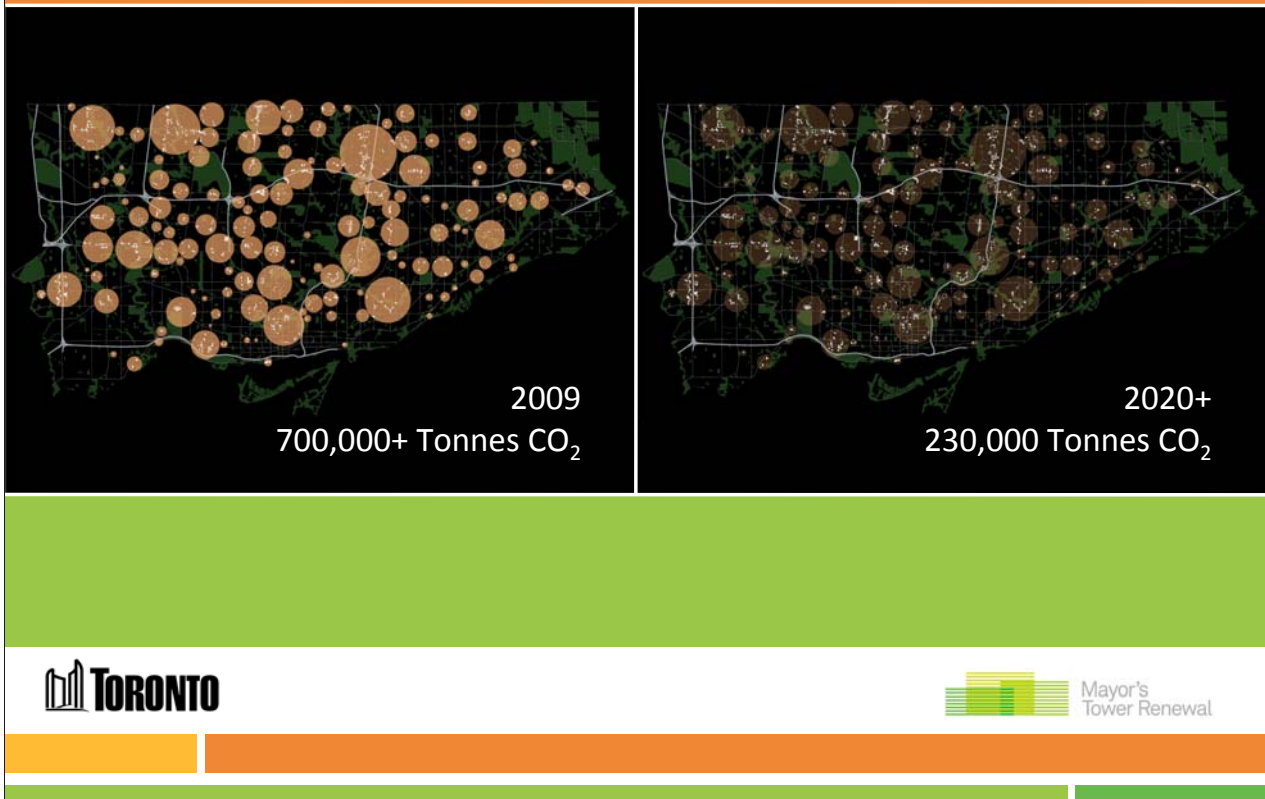
- This slide is one of our pilot sites
- The west site that is owned by Humber Properties
- Both of these buildings are participating
- Joining me today is Roslyn Brown
- Who is the property manager for Humber Properties, the company that owns these buildings
- So I'll turn it over to Roslyn to provide some comments from the perspective of a tower building owner



- The opportunities grow as we expand to clusters of towers and their neighbourhoods
- We can look at the needs of the communities and how we can make improvements to required services and how the public realm functions
- This includes:
 - The Toronto walking strategy that was adopted by Council last month sets out a program to bring tremendous improvements that support active transportation
 - opportunities for farmers markets and community gardening that will be advised by the food strategy that is under development
 - District energy potential will be assessed in community energy plans
 - The feasibility of bringing additional uses to the sites such as infill housing



- We can certainly see that the build out of Transit City will have a major impact on the tower neighbourhoods
- The new rapid transit lines are often in proximity to the tower communities
- it is the riders that live in the towers that will help make transit city feasible



- Tower Renewal has at its core a significant opportunity to reduce GHG
- When we multiply the impacts of the buildings, how they operate and how the residents are supported in making choices that reduce their carbon footprint, we expect significant results
- Tower Renewal will not be easy. It's a complex project
- Working with partners of all types is a key component of Tower Renewal.
- Mayor's Tower Renewal requires all City divisions and many City of Toronto agencies to work together across diverse areas of expertise in unprecedented levels of cooperation.
- The City of Toronto can develop the framework for action, but must work with property owners, residents and other business and community partners to expand, support and implement Mayor's Tower Renewal.
- The result we envision is of safer, cleaner and more exciting neighbourhoods - - neighbourhoods that people will enjoy living in
- It is our belief that a mayor in any city with the determination to fight climate change, can find opportunities similar to ours, by looking at their particular types of buildings and finding an area where great improvements can be made.
- Once that is done it requires the formulation and execution of a comprehensive program to improve and strengthen the environment, community and the economy leveraged through a program of building improvements.
- This concept will not only work in Toronto; it will work in many cities



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www.towerrenewal.ca

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- If you would like more information on Mayor's tower Renewal please visit the website
- Thank you