

Markham's greenprint

Sustainability
Plan

**“Leading the way together to liveable
neighbourhoods, healthy people and
continuing prosperity”**

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Development Services Committee Presentation – February 22, 2011

Purpose

- To review and collect feedback on the overall Greenprint document and the detailed initial recommendations

Presentation Outline

- 2 part presentation (Part 2 – General Committee, March 7) to review and approve the recommendations
- All recommendations have gone through extensive consultation and directly reflect the input of the public, staff, and stakeholders
- Council, staff and public will be engaged to help steer the implementation and timeline
- Goal is to review and approve as many of the recommendations as possible today; defer some items if necessary for later discussion

- **Vision**
- **Sustainability Pillars**
- **Priorities**
 - Objectives
 - Recommendations
- **Financial Discussion**
- **Governance**
- **Implementation Matrix**

Individual Health

Identity + Culture

Shelter

Social Equity

Social & Cultural Well-Being

Food Security

Access + Mobility

Education + Skills

Economic Vibrancy

Materials Management

Water Efficiency

Ecosystem Integrity

Energy + Climate

Environmental Health



Environmental Health
Social & Cultural Well-Being
Economic Vitality

Individual Health

Objective: Promote and support the physical and mental health of Markham citizens



Initial Recommendations:

1. Provide access to all public facilities and programs for Markham citizens regardless of means or ability
2. Develop partnerships with school boards to allow schools to be flexible community resources
3. Adopt the World Health Organization's Age-Friendly Cities initiative
4. Build connected, accessible and complete sidewalks, pathways, trails and bicycle routes that connect to all destinations
5. Maintain sidewalks, pathways, trails and bicycle routes year round

6. Provide rest opportunities that include water stations, washrooms, storage and locking for bicycles along sidewalks, pathways, trails and bicycle routes
7. Design and build context appropriate streets focused on the needs and comfort of pedestrians, cyclists, and persons with disabilities
8. Build parks, playgrounds, connected pathways and bicycle routes in the first phase in new communities
9. Provide signage that indicates pathway linkages and destinations.
10. Establish, enhance and promote safe routes to schools and walking school bus programs with YRSB
11. Develop and deliver healthy eating and lifestyle curriculum with Markham Libraries, Community Centres, and YRSB
12. Develop and deliver education and re-skilling programs to the community in partnership with Markham Libraries, Community Centres, YRSB and post-secondary institutions
13. Ensure child care is accessible, affordable and available throughout the community

14. Develop and implement policies to ban smoking at all Markham buildings and sites
15. Develop and implement policies to restrict sales and marketing of high-calorie, low-nutrition food/drink from Markham public facilities
16. Develop a plan where community facilities act as heating or cooling centres during times of need
17. Create a system of neighbourhood organizations responsible for fostering interaction and neighbourhood pride
18. Provide residents with information about outreach programs for those that are isolated
19. Establish interfaith and intergenerational committees and programs to proactively build bridges between/within communities
20. Create opportunities for growing food and establishing healing gardens in parks, at various facilities
21. Coordinate community connection programs that put seniors and youth together
22. Establish social planning capacity within the municipality to integrate social activities not currently being delivered

Social Equity

Objective: Reduce the impact of household poverty



Initial Recommendations:

1. Work with Region and Senior governments to facilitate a housing and transportation geared to income affordability strategy
2. Help create 10,000 new jobs in partnership with others through local economic development activities specifically aimed at reducing poverty
3. Partner with local businesses to develop criteria and set targets for employing low- income individuals who reside in Markham
4. Create community resource centres in schools, libraries, and community centres where goods and services can be exchanged, reclaimed or recycled

5. Create programs, committees and organizations for seniors, women and minorities to build welcoming space to find support, formulate ideas and build social networks
6. Provide support and land through neighbourhood organizations and partnerships for food growing
7. Proactively promote a welcoming, accessible and inclusive environment in all municipal facilities, parks and infrastructure
8. Proactively establish and promote active transportation in all municipal facilities, parks and infrastructure
9. Build alliances and coalitions with other social movements to facilitate and promote opportunities for all to be engaged, empowered and successful
10. Proactively design and regenerate communities to promote opportunities for seniors to continue living with family and within the family home for as long as possible
11. Consider creating microfinance and other supportive opportunities to establish and promote new jobs and businesses in partnership with business and other levels of government (Markham Convergence Centre, ISCM, etc.)

12. Ensure a range of authentic and creative arts, cultural and heritage opportunities are meaningful, accessible and financially affordable to residents and visitors
13. Compact, complete development ensures there are work, live, play opportunities for all in all neighbourhoods
14. Establish a social planning capacity within the municipality to integrate social activities not currently being delivered

Objective: Greater resident involvement in community stewardship



Initial Recommendations:

1. Provide classes to residents about how municipal government functions and how to get involved in making decisions
2. Establish a social planning capacity to coordinate and integrate service delivery within neighbourhoods
3. Support neighbourhood associations that empower local decision-making for local program and services delivery

4. Recruit and support individuals that represent the Town's demographic diversity for Town committees
5. Develop a community engagement policy and that encourages the participation of all demographic groups in decision making
6. Train staff how to engage diverse audiences
7. Expand and redefine agendas that address issues of concern for women, seniors and minorities
8. Nurture volunteer opportunities in all aspects of the community

Objective: Promote greater youth involvement in decision-making and participation



Initial Recommendations:

1. Develop social media as a means to communicate with youth
2. Develop a shadow youth council where members of council and staff serve as mentors to engage youth in the political process
3. Identify and engage at-risk youth with targeted services and opportunities

4. Seek youth input in planning decisions and other decisions that shape the community
5. Create spaces and programs that cater to the needs of youth at community centres and the Civic Centre
6. Encourage youth to celebrate the community and their neighbourhoods through festivals and events through the establishment of youth-driven committees, programs and initiatives
7. Create mentorship opportunities for youth in Markham, including peer-to-peer and adult-to-youth
8. Create funding sources and compensation mechanisms to support youth who want to serve in elected government



Education and Skills

Objective: Facilitate LIFE-LONG Learning & Skills Development



Initial Recommendations:

1. Partner with other levels of government, social service providers and agencies to provide accessible lifelong learning opportunities
2. Ensure creative learning opportunities are available, such as speaker series, conferences, post-secondary courses and community forums, providing opportunities for interaction between the community, online and at local facilities
3. Promote access to education and skills development opportunities at all stages of life and career
4. Work with the Markham Library and YRSB to develop and deliver a sustainability curriculum for residents, businesses, including re-skilling programs, learning about home/business energy, water efficiency and food growing

5. Partner with other levels of government, social service providers and agencies to provide accessible lifelong learning opportunities
6. Ensure creative learning opportunities are available, such as speaker series, conferences, post-secondary courses and community forums, providing opportunities for interaction between the community, both online and at local facilities
7. Promote access to education and skills development opportunities at all stages of life and career
8. Work with the Markham Library and York Region School Boards to develop and deliver a sustainability curriculum for residents, businesses, including re-skilling programs, learning about home and business energy and water efficiency and food growing
9. Ensure barrier-free access to education, training and skills development by promoting affordability and language-skills development
10. Establish, in partnership and collaboration with other levels of government and businesses, Markham University or other social innovation centre to support students, residents and businesses
11. Seneca partnership – become their largest real world experience partner – work to make Seneca's campus' better integrated into Markham's community

Identity and Culture

Objective: Promote and celebrate all that makes Markham great



Initial Recommendation:

1. Create a sustainable tourism strategy for Markham in partnership with York Region and others
2. Implement Markham's Integrated Leisure Master Plan
3. Capitalize on Markham's history, natural heritage and diversity for marketing and branding
4. Encourage new residents to retain traditional arts and culture practices in community facilities
5. Develop urban design and place making guidelines for all new Markham development that reflects the community's heritage, natural setting and cultural diversity
6. Implement a Public Art Policy that encourages public art in commercial and large residential projects, includes public art and funding in all Town new construction and retrofit projects

7. Create a community coordinator position for festivals, community events and engagement exercises that aim to foster cross-cultural understanding and experiences
8. Develop diverse programs and events that celebrate and explore those aspects of Markham that all cultures share (e.g. food celebration, stories of settlement, music, etc.)
9. Double the 2010 floor area of Markham cultural venues by 2030
10. Ensure a range of authentic and creative arts, cultural and heritage opportunities are meaningful, accessible and financially affordable to residents and visitors and contribute to the local economy



Food Security

Objective: Support education and engagement in the local food system



Initial Recommendation:

1. Create an advisory group of representatives from many sectors of the food system to identify opportunities in Markham
2. Provide training for food preparation, cooking, nutrition, ethical and environmental choices, and growing at existing facilities or create new facilities (community kitchens, community food centres)
3. Create training, mentorship and land-access opportunities for youth and immigrants who want to farm
4. Assist gardeners in sharing knowledge and resources through events, workshops and resources
5. Divert food from the waste stream through targeted efforts, including promoting small-scale composting and/or large scale biofuel digestion

Objective: Significantly increase food–producing opportunities

Initial Recommendation:

1. Plan and implement community gardens and other food-growing opportunities on town-owned land, private land and vacant land wherever possible
2. Implement requirements for community garden plots or other food growing opportunities for higher-density developments that meet the needs of residents
3. Provide a forum for residents to share available land and gardening knowledge
4. Promote healthy eating and living by promoting local food, developing demonstration gardens and implementing food-growing educational programs at town facilities
5. Plan and implement community-based orchards as part of enhancements to the urban canopy
6. Set soil standards in new communities so that yards and boulevards are “garden-ready” and provide assistance to existing neighbourhoods to amend soil

7. Review all Town by-laws and policies to ensure the support of food production within the urban boundary

Objective: Significantly increase the viability of local commercial food growing and processing

Initial Recommendation:

1. Create an energy descent food strategy that reflects how peak oil will affect the food system
2. Implement the recommendations from the adopted Agricultural Assessment Study, including ongoing consultation, advocating long-term leases, financial incentives, land-use policy, farm-friendly infrastructure, and innovative programs
3. Promote existing and support further food events, including agri-tourism, that focus on local, seasonal, and culturally diverse foods
4. Support locally produced, seasonal, and sustainable foods at Town facilities and functions, and promote healthy vending in local schools and institutions



5. Encourage roadside food sales on farms, kiosks in high-traffic areas, local independent stores, and Community-Supported Agriculture (CSA) to increase opportunities for farmers to sell food locally
6. Establish small plot intensive (SPIN) farming support network
7. Plan and promote the development of a food precinct as a means for local food brokerage, vending, processing and consumptions to create greater connections between local farmers and their markets
8. Encourage chemical-free, organically-grown food produced locally is available year-round at a price affordable to community members
9. Further incorporate the production and processing of local food into Markham's future economic plans
10. Ensure that the impact of climate change on agriculture is considered in mitigation and adaptation studies and strategies
11. Work with other levels of government to promote and support on-farm food growing, processing and infrastructure
12. Encourage local food processing to be highly water and energy efficient

Energy and Climate

Objective: Net zero Energy, Water, Waste and Emissions by 2050

Initial Recommendation:

1. Create an energy descent strategy that reflects a proactive timeframe to reduce greenhouse gas emissions from buildings, transportation, waste and agriculture. Reduce dependency on potable water system by implementing dual water systems, cisterns supplied by harvested rainwater and recycled waste water
2. Create a community waste management strategy that promotes locally sourced durable materials that are less environmentally harmful, preferring recycled, reclaimed and sustainably harvested materials, and plentiful metals
3. Provide appropriate and convenient community opportunities for reducing, reusing and recycling materials
4. Create carbon sinks to capture greenhouse gas emissions by planting and protecting trees, increasing natural areas, open space and agriculture



5. Proactively advance plantings of climate adaptive species like Carolinian forests
6. Proactively prepare for new disease vectors and invasive species as Markham's climate warms
7. Prepare a recreation strategy to respond to climate change
8. Identify geographic energy and water conservation/generation and carbon reduction/sequestration and food production/processing opportunities
9. Improve storm- and-wastewater quality and reduce quantity to streams through lot level controls, such as bioswales, green roofs and impermeable surfaces
10. Seek opportunities to reduce air, water and land pollution from transportation, buildings and industry
11. Enhance resiliency by increasing and supporting biodiversity, re-skilling, community currency and local food
12. Develop a community emergency management strategy for people, domestic animals, wildlife and livestock
13. Develop a Climate Action Plan with one framework for both the

Community, including residents and businesses, and one for The Corporation of the Town of Markham (Corporate) that will be focused on reducing Markham's green house gas emissions and preparing Markham for expected future shocks from:

- Climate change induced weather changes including; increasing temperatures, severe storms, changes in precipitation and more
- Peak oil energy pricing – energy shortages
- Water scarcity
- Economic uncertainty – global income gaps
- Food shortages
- Centralized infrastructure failure or terrorist attacks



14. Promote ongoing community outreach, education and understanding as well as climate change research and development in Markham
15. Be innovative in our application of technology through the use of systems thinking to deliver efficiencies, resilience and redundancy

The Climate Action Plan

1. The CAP will build on the research and analysis conducted by ICLEI for the Partners in Climate Protection program
2. The CAP will have two streams of work; one for The Corporation of the Town of Markham (The Corporation) and one for the community of the Town of Markham (the community)

Corporate Measures – Initial Recommendations:

1. Strike a cross-commission committee assisted by an external consultant to:
 - Identify and analyze future events that could affect our ability to serve the community
 - Develop an energy and water conservation plan with targets and meets the expected Green Energy & Green Economy and Water Opportunities & Water Conservation Act regulations



- Identify opportunities and funding for reducing Corporate net GHG emissions (reduction and sequestration) from our buildings, street lights and our fleet
 - Review, recommend and coordinate improvements for all existing employee efficiency and conservation education and engagement programs including; Smart Commute, MECO...
 - Develop a process to guide the Town to continue improving and critically reviewing its resilience
2. Develop automated tools to monitor, track and eventually conserve energy and water consumption and therefore reduce GHG emissions of Corporate buildings and vehicles
 3. Strike teams in each Town facility that will focus on reducing their environmental impact assisted by the Sustainability Office
 4. Continue to conserve energy through building improvements, developing renewable energy generation, right sizing vehicles, switching to hybrids or electric vehicles
 - Conduct audits, practise continuous commissioning and standardize the Town's building automation systems

- Reinvest the revenues and savings generated by energy conservation and generation into new energy projects
5. Require Markham Enterprise Corporation held businesses to develop sustainability reports aligned with the Greenprint and CAP

Community Measures – Initial Recommendations:

1. Strike a cross-commission committee that includes community members, assisted by external consultant that will:
 - Develop energy and water consumption and generation map based tracking tools
 - Identify geographic energy and water conservation/generation and carbon reduction/sequestration and food production/processing opportunities
 - Identify geographic energy, water and food climate change associated risks that will affect the community's ability to prosper
 - Set energy/water/GHG/food baselines and targets based on growth projections and exceeding provincial/federal targets

- Based on tools, risk analysis and external funding opportunities identify areas of focus and develop pilot projects
 - Develop a process and tools to periodically or continually review energy and water consumption, pilot project effectiveness and make recommendation on future projects and programs
2. Oversee and work to align with the Greenprint and CAP the Transportation Master Plan and all other high level Town plans
 3. Develop new measures that consider the HBLanarc GHG reports key findings of:
 - Expansion scenarios have little affect on future GHG emissions since new buildings and vehicles will create less GHG emissions per unit due to senior government regulations
 - Optimization of Town planning and transportation policies as recommended in the Greenprint will compliment senior government regulations by further decreasing GHG emissions
 - Existing buildings (homes, industrial, commercial and institutional) represent one of the largest opportunities for GHG reductions in the Town

4. Create a development checklist that will offer incentives to developers that:
- Include an energy and water efficient building design optimized by energy modeling
 - Achieve LEED Silver or equivalent in BOMA, Energy Star
 - Meet York Region's Sustainable Housing Incentive Program (SHIP)
 - Include operating cost forecasts and expected energy (ekWh/m²), water (m³/m²) and therefore GHG emission (eT CO₂/m²) intensities
 - Apply Integrated Community Energy Solutions principles
 - Connect to Markham District Energy
 - Agree to report annually to the Town their ongoing energy use
 - Apply design principles to implement Greenprint and Climate Change Action Plan (CCAP)'s recommendations
 - Includes an engagement and outreach plan to educate future residents in low impact living
 - Contains a transportation demand management plan

- Conducted a Life Cycle Assessment of their project similar to that described by the Athena Foundation
- The Town will work with respective funding agencies and organization to develop a streamlined application process for development projects within Markham
- Develop a community energy co-operative in Markham
- Policies to address the conflict between the natural environment and renewable energy generation
- Policies that support the Greenprint and Climate Change Action Plan (CCAP)
- Financing that will assist with developing Greenprint and CCAP actions
- Consider air quality issues
- Develop community education and outreach programs that appeal to all Markham residents to help them understand and participate in the CCAP
- Assist with funding ongoing climate change research development in Markham
- The Town will study innovative technologies and concepts like time-of-use road tolls to change transportation behavior, revenues from such an idea will be used for investment in public and active transportation infrastructure

Materials Management

Objective: Achieve Zero Material Waste



Initial Recommendation:

1. Create a procurement policy that includes policies for closed-loop materials management
2. Develop a culture of conservation and waste minimization—water, energy, materials, and other resources through education, social marketing, and access to real-time information
3. Work with local businesses to adopt zero- waste strategies and seek partnerships with local business to accept returned waste materials generated by consumer goods purchased at the business
4. Advocate with the Province of Ontario for producer responsibility regulations for waste materials

5. Ensure service agreements for municipal services include sustainability provisions such as requirements for energy efficiency, renewable energy generation, zero-waste management, reuse of recycled materials, and/or achieving social objectives such as local employment targets
6. Leverage partnerships with other organizations to reduce supplier waste
7. Create policies that achieve diversion opportunities for 'non-residential' waste such as commercial and small businesses, government operations and other stakeholders
8. Ensure zero waste in Libraries, Parks, Community Centres, Fire, Police and all Markham facilities
9. Consider alternative technologies for managing waste materials, such as "Pipe Technology" for large-scale new developments
10. Tax materials not readily recyclable at a rate commensurate with safe disposal cost
11. Develop alternative energy sources, such as waste biofuels , for Markham District Energy

Economic Vitality

Objective: Facilitate and Support Markham's existing businesses

1. Implement Markham 2020 Strategic Directions economic development plan
2. Implement a buy local campaign for locally produced or packaged goods and services
3. Work with trade and commerce organizations to engage businesses to work together to identify opportunities for local business growth
4. Develop Eco-Business Districts that promote business networking and information sharing that aim to reduce reliance on fossil fuels, greenhouse gases, energy consumption (from buildings and transportation) from businesses and/or business parks



5. Promote community and business mentorship programs for Markham's youth, underemployed and new Canadians that seek to create awareness of workplace skill requirements and professional work environments
6. Facilitate, encourage and promote businesses that have active employees through live-work balance, healthy lifestyles, and bicycle facilities

Objective: Promote green business development and business greening strategies of existing and new employers



Initial Recommendation:

1. Strategically target 'green jobs'
2. Create demand for local employment in the green energy sector and local food production and processing by developing purchase agreements – amend purchasing by-laws as necessary
3. Create demand for local employment in sectors that rely on local resources and that improve resilience, such as agri-tourism, canning, preserving, cooking or baking, home and clothing repair

4. Promote viable local food businesses and services
5. Target 25,000 green jobs as part of Markham's Vision 2020
6. Work with industry to develop a Markham-based centre of excellence serving the green, social and creative sectors
7. Create "new economy" incubators and mentorship opportunities for new businesses

Objective: Support diverse employment opportunities throughout Markham

Initial Recommendations:

1. Promote employment activities within areas that are served by higher-order transit
2. Increase the number of market-viable businesses within walking distance of residential land uses
3. Support work-from-home businesses
4. Support businesses that contribute to local food growing
5. Encourage reskilling in order to ensure the ongoing evolution of a low carbon economy



Access and Mobility

Objective: Create a culture of walking, cycling, and transit usage



Initial Recommendation:

1. Create the regulatory framework for focusing redevelopment and new development around pedestrian needs
2. Increase funding and seek partnerships to implement transportation - demand management initiatives
3. Implement local and/or support regional pricing policies, such as toll roads and congestion fees that encourage transit use and active transportation
4. Partner with schools and employers to reduce automobile trips by implementing transportation-demand initiatives
5. Promote the use of car sharing, offsetting vehicle ownership
6. Require that all new development be designed primarily for pedestrian and cycle circulation

7. Work with employers and others to spread out peak use of roads
8. Shift spending and planning priorities to promote greater walking, cycling and transit use
9. Shift community planning and development to place a greater emphasis on optimizing land use and public-realm design to increase the viability of multi-modal transportation
10. Expand multi-modal network improvements by creating dedicated and integrated pedestrian and cycling routes that connect predominant housing areas to employment areas, amenities and institutions
11. Create transit opportunities for high demand destinations such as restaurants and entertainment precincts, tourist destinations and services
12. Integrate transit and cycling facilities by ensuring cycling network and bus route connectivity and installing bike lockers at stations and on-bus bike racks
13. Integrate multi-modal transportation exchanges in neighbourhood centres, including bus stops, bicycle storage, share cars, and private vehicle and taxi parking
14. Make walking, cycling and transit use safe, convenient and usable for all of Markham's residents, with emphasis on youth and children, people with disabilities, non-English-speaking-or-reading residents and low-income individuals

Objectives: Create roads for all users



Initial Recommendation:

1. Increase transportation system capacity through policies focused on creating network efficiency, increasing modal split, incentives for private sector transit operators, intelligent transportation technology
2. Follow guidelines provided by the Ontario Road Ecology Group's "A Guide to Road Ecology in Ontario"
3. Road Classification: Create a street classification system focused on three layers: neighbourhood, community, and region. Create standards that respond to these contexts and work with other levels of government to meet Markham's needs related to climate change resiliency and energy use
4. Pursue measures that enable transit, cycling and pedestrian priority over single-occupancy vehicles on all major routes and intersections
5. Implement design and land-use measures that maximize pedestrian and cyclist-friendly comfort on all streets
6. Equitably design streets so that non-automobile modes are viable year-round, safe, comfortable, and efficient
7. Focus efforts on high-streets in regeneration areas

Objective: Connect Communities



Initial Recommendation:

1. Develop an urban trails and greenway network that facilitates walking and cycling to major civic institutions and employment areas within the community, specifically:
 - Prioritize off-road trails and greenway networks
 - When off-road routes are not feasible or viable, provide safe and separated bike lanes within the street right-of-way
 - When separated on-road cycle lanes are not viable, implement safe and convenient on-road cycling lanes within the street right-of-way
 - Maintain pedestrian paths and bicycle trails year-round at the same service levels as automobile routes
2. Take a 'habitat enhancement' approach to park planning, maintenance and management for all new landscaped areas to create connected wildlife corridors
3. Use of public lands and power line right-of-ways for planting of native plants and growing food gardens in partnership with others

4. Create an urban forest and set achievable targets for urban canopy coverage in public open spaces
5. Continue the Trees for Tomorrow tree-planting program and funding, but focus efforts to be consistent with an urban-forest strategy
6. Develop eco-education resources for homeowners and businesses to raise awareness of landscape planting and management practices that promote habitat creation
7. Provide places to rest, orient, get a drink of water, or use a washroom within the public realm of streets, trails and greenways to meet the needs of an aging population



Shelter

Objective: Regenerate existing neighbourhoods through sensitive evolution



Initial Recommendation:

1. Create a department of regeneration focused on infrastructure modernization, public engagement, and socio-cultural aspects of neighborhoods to respond to issues related to climate change and increasing energy costs
2. Geographically define neighbourhoods within existing communities
3. Focus regeneration on pedestrian needs
4. Create neighbourhoods that include a mixed use “high-street”, viable local-serving retail, varied housing choices, including low-rise apartments, access to services/community facilities, and rapid or frequent transit
5. Ensure a maximum 15-minute walkshed, measured from the neighbourhood’s centre and take into consideration barriers such as large and hostile streets, rail crossings, large format blocks, and natural features

6. Ensure that blocks do not exceed 450 meters or approximately a five-minute walk for a person travelling at 1.5 meter per second
7. Emphasis should be placed on creating pedestrian connections
8. Define planning units within larger, existing communities by identifying new neighbourhoods
9. Develop high-quality public realm, including heritage preservation, as a means to identity the distinct neighbourhoods
10. Develop neighbourhood-appropriate urban design and architectural character guidelines that promote placemaking, and general Markham guidelines that promote built form focused on liveability and walkability to support community development and gathering
11. Ensure a co-creative and engagement communication model of neighbourhood planning, with public consultation, for regenerating neighbourhoods
12. Work with residents to create more complete neighbourhoods through identifying and creating new buildings, streetscapes, landscaping, and infrastructure measures that will increase vegetation and food-growing opportunities, reduce greenhouse gases, waste generation, and improved energy and water efficiency

13. Promote sensitive resiliency redevelopment
14. Promote live-work development within neighbourhoods and along major roads
15. Strategically intensify underutilized areas such auto-oriented retail places, strip malls, large-format retail sites, and undeveloped sites in and around existing neighbourhoods to serve as neighbourhood centres and to increase residential densities to support transit
16. Leverage Transit through Active Transportation Investments for areas within a 5 minute walk from existing or planned rapid transit stations, create compact, mixed-use /pedestrian-friendly neighbourhood centres
17. Promote sensitive redevelopment of existing housing to higher intensity-grade-related housing, semi-detached, town- or row-housing, and low-rise apartments
18. Focus on water, energy, and socio-cultural resiliency in neighbourhood regeneration through the use of smart systems, monitoring, and communication

Objective: Plan, design & construct high performance new neighbourhoods



Initial Recommendation:

1. Prioritize intense mixed-use development for new neighbourhoods
2. Ensure residential densities and other uses support pedestrian-oriented activities and are transit-supportive at all scales
3. Pursue a more mixed-use model of community planning and design that integrates business, industry and residential development at appropriate locations
4. Integrate parks and open spaces, such as actively programmed parks and plazas that promote community gathering and physical activity for all users, with emphasis on families, youth and seniors
5. Make full use of policy and regulatory tools and pursue partnerships and government funding to deliver housing tenure diversity, and non-market affordable and supportive housing options in large-scale redevelopment

6. Plan new neighbourhoods using appropriate modeling and analytical tools, including asset mapping, that demonstrate optimized neighbourhood design that delivers minimum energy consumption and greenhouse gas generation and responds to socio-cultural needs
7. As a condition of approval, new neighbourhoods should include a plan that identifies key elements of the public realm and social assets (galleries, recreation centres, libraries, parks, plazas, squares, etc., both public and private), and how they will be made accessible to residents
8. Maintain the health and quality of soils throughout the development of new neighbourhoods and the regeneration of existing neighbourhoods
9. Work with natural topography and hydrology to preserve native vegetation, improve storm water management and maintain water quality



Objective: Develop an affordable Housing Strategy

Initial Recommendation:

1. Adopt annual housing targets for new development according to the Markham Preferred Growth Alternative with 27% singles/semis, 19% townhouse, and 54% apartments for new residential units to 2031. This target helps to accommodate households experiencing increased affordability challenges including singles, youth, seniors and new immigrants
2. Adopt strategies to promote rental accommodation in new and existing housing developments
3. Work with builders and developers to construct a range of built forms including small lot singles, stacked townhouses, linked homes, apartment buildings and other innovative housing options
4. Work with York Region, developers, builders, and other community partners to increase the supply of subsidized and social housing; and alternative forms of affordable housing models such as rent-to-own, and home ownership cooperatives
5. Develop affordable and flexible community based rental housing options as well as an income opportunity for home owners

6. Promote with local builders and developers the principles of Flex housing / design features, and improved accessibility to accommodate evolving and different needs of residents
7. Work with York Region and other partners to increase the supply of special needs housing for persons with mental illness, developmental disabilities, physical disabilities, and for frail elderly
8. Work with York Region to plan for a housing help centre and or emergency shelter in Markham
9. Provide incentives such as cost offsets, density bonusing, fee waivers, fast-tracked approvals, alternative development standards to help meet affordable housing and special needs targets
10. Investigate adding social/affordable housing as a charge under the Town's or the Region's development charges by-laws in order to provide funds necessary to provide grants for affordable housing
11. Partner with the Region and housing service providers to prepare an education and awareness program to highlight the economic and social advantages of affordable and special needs housing in Markham
12. Work with the new Welcome Centres and other immigrant support service providers to provide housing and related information to new immigrants

Water

Objective: Develop a water systems plan that integrates all water functions

Initial Recommendation:

Markham is reliant on other jurisdictions for water supply. To reduce this reliance, Markham will develop the ability to capture and reuse storm water and waste water for non-potable uses while:

1. Markham's potable (drinking) water supply system continues delivering drinking water of excellent quality and reliability
2. Markham develops a networked district nonpotable water system that treats water as a resource – waste water is efficiently and safely recycled, added to harvested rainwater which then becomes nonpotable supply for uses like irrigation, cleaning and toilet flushing
3. We educate our residents, businesses and visitors to understand water as a vital resource
4. Potable (drinking) water is used sparingly and only used to meet appropriate needs



5. Watershed-based management approaches and policies guide and integrate overlapping land and resource values including (but not limited to) development, infrastructure, forests, habitat, recreation, fisheries and aquifers
6. Effective stormwater management and flood control measures are in place, and replicate natural hydrological systems and functions as much as possible
7. Flood control systems are maintained at a high level of emergency preparedness, where risks are managed proactively, effectively, and efficiently
8. With respect to water resources, capital and long-term costs are managed in a financially prudent and fiscally responsible manner
9. Potable water supply source protection is optimized within a multi-barrier approach
10. Healthy streams, rivers, lakes and wetlands support thriving populations of fish, wildlife and aquatic invertebrate
11. Inflow and infiltration of rain and groundwater to our sanitary sewer system is actively managed

12. We will consider the energy-water nexus in our work, which is the dependence of water infrastructure on significant volumes of energy and the dependence of energy generation on significant volumes of water for cooling and other processes
13. We develop water, waste water and storm water rates which will ensure the long term financial sustainability of our multiple but increasing integrated infrastructures but also spur conservation, reduce outflows and incent safe and efficient water recycling and reuse



Ecosystem Integrity

Objective: Increase biodiversity

Initial Recommendation:

1. Implement public and private development landscaping standards that integrate plant species and planting strategies that contribute food, attract songbirds, insects and other urban animals, including vertical landscaping, green roofs and other innovative landscapes
2. Green roofs and green spaces in or on buildings to provide wildlife habitats
3. Adopt Fatal Light Awareness Program's Bird-Friendly Guidelines for all new and existing buildings, including an agreed-upon timeframe for existing buildings
4. Revise standards and make use of green building rating programs (such as LEED™) to advance native landscaping requirements and site- canopy coverage
5. Establish edible landscape strategy for public and private spaces that includes targets and timeframe



6. Establish a dark sky policy to eliminate exterior lights in the community after 11 pm
7. Actively acquire lands that enhance, create or connect wildlife habitat within the urban and rural context
8. Create a strategy using vacant land as flexible open space for recreation, gardening, food growing or wildlife habitat
9. Establish a strategy to increase biodiversity on agricultural lands

Objective: Thirty percent tree canopy and vegetation coverage in the urban environment



Initial Recommendation:

1. Develop, promote and maintain an urban-forest planting strategy and plan
2. Improve natural processes in urban areas by using native and resilient plant species
3. Create a native tree-and-plant nursery to supply the Town and resident's needs

4. Develop guidelines with academic and industry experts for tree type and placement for homeowners and developers, maximizing energy efficiency and take into consideration issues such as climate change when making species selection
5. Provide education/assistance programs for homeowners to care for and manage their trees, extending their lives as long as possible
6. Ensure new trees are planted to replace aging trees in mature areas
7. Harvest end-of-life tree materials for recycling/reuse within Markham
8. Street fruit and nut trees will assist in providing green space as well as local food opportunities
9. Develop a plan to establish edible landscapes across the Town in both public and private lands
10. Work with York Region and other partners to incorporate and implement the Local Food Strategy as part of the planning, design and development framework

Objective: to develop and support wildlife habitat



Initial Recommendation:

1. Develop and implement an interconnected Natural Heritage Network, working towards connectivity between existing green spaces and ensure they are of sufficient quality and size to support wildlife
2. Deliberately connect disconnected spaces to allow wildlife movement across the Town
3. Protect and enhance existing wildlife habitat and provide green spaces that are biodiverse, climate-adaptable and flexible and for all creatures' enjoyment
4. Renaturalize streams and habitats that have been built over by restoring watersheds and subwatersheds of the Don and Rouge Rivers
5. Define a physical urban/rural boundary that preserves green spaces and agriculture by utilizing strong land use and design tools
6. Work with local partners to develop a local wildlife refuge, shelter and rehabilitation centre
7. Work with local partners to establish a wildlife stewardship program
8. Establish a community emergency management strategy that includes responsibilities for wildlife, livestock and domestic pets

General Recommendations

1. Task Sustainability Office to:
 - Measure and report indicators every two years to determine progress
 - Facilitate partnerships among governments, agencies, non-governmental organizations, institutions, and the business community to align common goals and objectives and to avoid duplication of services
 - Seek out funding opportunities for implementing the strategies.
2. Build capacity within individual commissions to achieve sustainability
3. Provide strong leadership within and beyond local government to achieve a Markham-defined sustainable outcome



Governance

Initial Recommendation:

1. Develop a sustainability checklist for Council and staff to use to consider decisions
2. Revise the Council report system to include sustainability lens with Sustainability Office sign off until sustainability is embedded in the organization
3. Work with other partners to establish an initial series of working groups
4. Establish a Capacity Building fund, funded by the Gas Tax, to implement the Greenprint and inspire collaboration, partnerships and innovation



Governance

Initial Recommendation (con't):

5. Create a reward and recognition initiative that celebrates the successes of Greenprint implementation and encourages collaboration, partnerships and innovation
6. Measure and report indicators every two years to determine progress
7. Facilitate partnerships among governments, non-governmental organizations, institutions, and the business community to align common goals and objectives and to avoid duplication of services
8. Seek out funding opportunities for implementing the strategies
9. Build capacity within individual commissions to achieve sustainability
10. Provide strong leadership within and beyond local government

Governance



Initial Recommendation (con't):

11. Incorporate systems thinking and Greenprint recommendations into corporate business plans
12. Link outcomes identified in Greenprint with staff performance reviews
13. Identify sustainability impacts when creating staff award reports for purchasing
14. Assess and hire staff that demonstrate systems thinking and collaborative approaches to working
15. Promote volunteerism in the community
16. Change staff job descriptions to emphasize eliminating green house gas emissions and other waste
17. Create and support a culture of sharing common resources

Financial

Initial Recommendation:

1. Establish a revolving fund to be used to implement the Greenprint
2. Develop a collaborative and integrated approach for pursuing grants from different levels of government, non-governmental, business and philanthropic organizations
3. Build collaboration and partnerships to create efficiencies around purchasing, financing, and borrowing
4. Leverage new financial tools and opportunities resulting from the renewable energy production, energy and water conservation, and carbon pricing
5. Partner with service delivery agencies to reduce duplication of services

Implementation

Key Strategies

1. Integrate sustainability priorities and strategies into regular Town business
2. Culture of innovation and leadership
3. Monitoring, Measurement and Reporting
4. Shared Responsibility and Active Community

RECOMMENDATIONS			ROLES					PROPOSED TIMING			Funding / Cost \$
	Meeting Key Priorities	X-refer	Comm. Services	Develop. Services	Corp. Services	CAO Office	External Partner(s)	2011-15	2015-25	2025+	
12. Objective -- Net Zero Energy, Water, Waste and Emissions by 2050											
12.1 Create carbon sinks to capture greenhouse gas emissions by planting and protecting trees, increasing natural areas, open space and agriculture	Energy & Climate, Ecosystem Integrity	13.2, 23.5	Lead	Support	Support		York Region, TRCA, Prov	X			Gas Tax, Capital...

Next Steps

1. Bring Greenprint back to Committee March 7th, 2011 to continue review and consultation of initial recommendations
2. Revise Greenprint through March based on feedback
3. Approval of Greenprint April 2011
4. Final report to FCM Green Municipal Funds by June to receive final grant allocation

Markham's
greenprint
Sustainability
Plan

