

2ND REPORT OF THE
TREES AND FORESTS ADVISORY COMMITTEE

Meeting held on January 14, 2016, commencing at 12:15 PM, in Committee Room #4, Second Floor, London City Hall.

PRESENT: R. Mannella (Chair), A. Cantel, P. Ciufu, C. Haindl, J. Kogelheide, C. Linton, G. Mitchell and J. Martin (Secretary).

ABSENT: A. Adgria, C. Dyck and I. Kalsi.

ALSO PRESENT: A. Beaton, K. Hodgins, I. Listar, R. Postma, J. Ramsay, S. Rowlands, A. Strocki and B. Williamson.

I. CALL TO ORDER

1. Disclosures of Pecuniary Interest

That it BE NOTED that no pecuniary interests were disclosed.

II. SCHEDULED ITEMS

None.

III. CONSENT ITEMS

2. 1st Report of the Trees and Forests Advisory Committee

That it BE NOTED that the 1st Report of the Trees and Forests Advisory Committee, from its meeting held on December 15, 2015, was received.

IV. SUB-COMMITTEES & WORKING GROUPS

3. Allergens, Climate Change and Invasives Working Group

That it BE NOTED that the attached report from A. Cantel with respect to the Allergens, Climate Change and Invasives working group was received.

V. ITEMS FOR DISCUSSION

4. Tree Conservation By-law

That it BE NOTED that the Trees and Forests Advisory Committee (TFAC) held a general discussion with respect to the Tree Conservation By-law; it being noted that C. Linton will report back at the next meeting of the TFAC with respect to this matter.

5. Planting Strategy - S. Rowland, Urban Forestry Planner

That a Working Group BE ESTABLISHED consisting of A. Cantel, P. Ciufu, C. Linton (Lead), and G. Mitchell, to review the City of London Planting Strategy – Draft Outline and report back at the next meeting of the Trees and Forests Advisory Committee (TFAC); it being noted that the TFAC received the attached presentation from S. Rowland, Urban Forestry Planner, with respect to this matter.

VI. DEFERRED MATTERS/ADDITIONAL BUSINESS

6. Road Work in Rowntree Neighbourhood and Impact on Trees

That it BE NOTED that discussion related to road work in Rowntree neighborhood and impact on trees was deferred to the next meeting of the Trees and Forests Advisory Committee.

7. Green Legacy

That R. Johnson, Green Legacy Manager, Wellington County, BE INVITED to a future meeting of the Trees and Forests Advisory Committee (TFAC) to make a presentation with respect to the Green Legacy Program operating in Wellington County; it being noted that the TFAC approved expenditures of up to \$250.00 with respect to this matter; it being further noted that the TFAC has sufficient funds in its proposed 2016 budget for these expenditures.

8. (ADDED) February Meeting

That it BE NOTED that the February meeting will be held on Wednesday, February 17, 2016.

VII. ADJOURNMENT

The meeting adjourned at 2:16 PM.

NEXT MEETING DATE: February 17, 2016

Policy Memo: Proposed City of London Urban Forest Climate Change Action Plan

Prepared by: Carol Dyck & Amber Cantell

Date: Jan. 14, 2016

Canada recently committed to bold climate action during the 21st Conference of the Parties to the United Nations Framework Convention on Climate Change held in Paris in December 2015. Reaching these targets, particularly the ambitious goal of not exceeding a 1.5 degree Celsius rise in global temperatures, will require cooperation and dedicated efforts by Canada's municipalities. Irrespective of national commitments, municipalities will experience increased environmental (and likely, societal) pressure to both mitigate and adapt to local climate change.

During COP21, scientists warned that with current projections, and without a concerted effort to combat climate change, the global average temperature will increase by somewhere between 3°C and 5°C. In Canada will experience an increase in temperature twice that of the global average, ranging from 6 degrees Celsius to an alarming 10degrees Celsius. Consequently, Canada's ecosystems are expected to shift and alter at unprecedented rates as they come under environmental stress. This situation applies equally to Canada's urban forests. Given a projected rise of 4 degrees Celsius in London, Ontario (if international efforts are successful in holding the global average to 2 degrees Celcius), the City's local climate will more closely resemble that of Kentucky.

Urban forests play a vital role in mitigating the effects of climate change, by lowering urban temperatures, cleansing the air, providing shade, reducing energy use, etc. They will be crucial in ensuring a healthy environment for urban citizens. However, with rapid changes in temperature, and the resulting extreme weather events and drought expected to accompany this rise, London's urban forest may be ill equipped to thrive and provide the city with environmental, health and social benefits, particularly as plants simply cannot move fast enough to keep up with the rate of our changing climate. As such, the City must evaluate its options for the future of its urban forest.

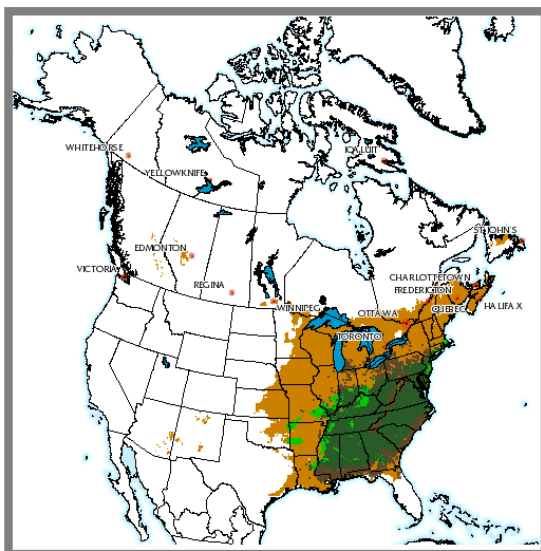
Option 1: Status Quo. As the City of London experiences environmental change over the next five, ten and thirty-five years, one policy option is to simply let nature take its course. Under this scenario, the City would continue its efforts to reforest London with the help of local non-governmental organizations, local citizens and perhaps with the aid of provincial and/or federal grants. In this case, the City would not adapt species choice to a changing climatic reality, instead allowing London's urban forest to evolve of its own accord following a "survival of the fittest" view, likely suffering massive loss of trees as a result as current species struggle with the substantially changed climate. In parks, ESAs and other forested areas, the City would allow natural reseeding to occur without interference.

Option 2: Plant more drought tolerant and disease resistant trees with the expectation that these species would fair better in a hotter, drier environment. Tree selection could also include those species which may better survive extreme weather events, which are expected to become more frequent in the coming years. Under this scenario, more attention is given to the robustness of the trees, than to their "native" status. While this scenario has obvious benefits in terms of overall tree survival, the City would experience the unintended negative effects of invasive non-native species. Currently, London's most common tree by stem count is the European Buckthorn and by size is the Norway Maple. Both these species are invasive, and buckthorn in particular can have particularly ravaging effects in London's ESA's and other woodlands. Though Norway Maple is invasive, this species continues to be planted within the City's limits. With temperature rises and climatic alteration, invasive species are already forecasted to become more aggressive and more pervasive, as stressed native species cannot effectively compete with more weedy species that do not have natural checks and balances. As

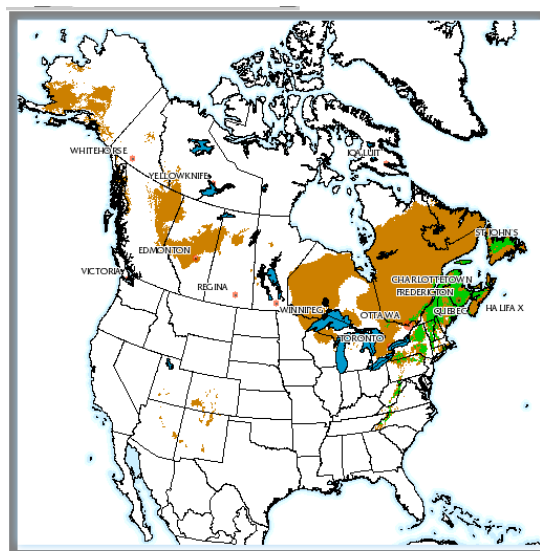
such, this particular option is not recommended. The economic and ecological costs of introducing hardy yet non-native (i.e. non-continental species) outweigh any benefits that may arise from this policy.

Option 3: Assisted Migration. As the climate warms, the natural range of species will shift. Such shifts have occurred regularly throughout history, with evidence of large range shifts taking place during the ice age and little ice age in the Earth's recent past. However, the current rate of change is so great that many (if not most) species will likely not possess the capability to shift at a rate fast enough to ensure their survival, as evidenced by the rate of forest progression northward following the end of the last ice age. Trees and forests, for example, cannot shift to a more suitable climate as quickly as insects and other more mobile and quick adapting species.

Given that range shifts are predicted to occur, and given that the City can expect that its urban forests will experience stress due to increased temperatures and altered weather patterns (thereby exposing them to greater risk of disease and death), option three proposes that the City look to more southern locations which are projected to closely resemble London's future climate to deduce which trees would naturally shift their range northward (all things being equal) and plant those trees on London's streets to ensure a greater survival of seedlings and better guarantee a healthy urban forest. In London's case, the selected trees would include those currently found in Kentucky. In essence, the City would assist the migration of tree species that are naturally too slow moving to keep pace with the rapid warming of the climate. Trees are slow growing; to ensure mature trees are available to provide seed to existing woodlands, the City must start planting them today. A failure to maintain healthy woodlands as our climate changes will exacerbate air quality impacts, reduce their ability to help combat climate change, and have a significant impact on quality of life here in London.



*Current range of tulip-tree
(Liriodendron tulipifera)*



*Future range of tulip-tree, based on
composite-AR5 model and RCP 8.5
("business as usual") emissions scenario
for 2071-2100*

One possible criticism for option three involves the risk of unleashing a future destructive invasive species into London's ecosystem. Traditionally, any species not native to an area that moved into an area and began reproducing and outcompeting native species were seen as "invasives". These species also offered less ecological benefit because they did not bring their host of associated species with them. This perspective, however, loses some meaning in light of climate change, where it is inevitable that more southern species would naturally shift northward and appear, under traditional definitions, "invasive", though this is in fact simply a range expansion. At the same time, as climate warms, a growing number of species from other continents will become more likely to be

(traditionally) invasive here as they are better able to survive the warmer weather. Therefore, there is a need for the City to reevaluate how it classifies invasive species.

The traditional definition of invasive species does not differentiate between those coming from a shared landmass (i.e. the southern United States) potentially as a result of range expansion or shift, and those arriving through human introduction from a separate landmass (i.e. Norway maple). With a changing climatic reality, differentiation must be made between different types of species non-native to London, based on their geographic origin. As such, the City should adopt a “continental” approach to species classification instead, which would include: **native** (species already native to London); **non-native continental** (species native to other parts of North America); **non-native, non-continental** (species from other continents which are not (yet) invasive in Ontario); and **invasive, non-continental species** (species already defined as invasive and having no natural range in North America). This classification system would prove very beneficial during the tree selection process and would greatly reduce the risk of spreading invasive species.

Recommendation: In 2012 over the course of a discussion around the City’s Tree Planting Guidelines, TFAC members identified a set of concerns linked to climate change: range changes and assisted migration; invasive species; and health impacts from pollen. The recommendation to factor climate change into London’s urban forest plan constitutes a substantial (and much needed) overhaul of current tree planting guidelines. **Option three** currently represents the best option for the City of London. Given the current shift in temperatures and weather patterns, and given the need to ensure a healthy and robust urban forest for the social, economic and environmental benefit of the City, London should plant both species that are currently native to London and adapted to today’s climate, as well as species expected to become native to London as their range shifts. Hedging climatic bets in this manner, however, will require additional planting space, and so the City should cease planting non-continental invasive species immediately to both ensure there are planting opportunities for assisted migration efforts, and to reduce the costs of invasive species removal that could result from planting non-continental invasive species. This policy option will present minimal cost to the City and serves more as a good practices guide in the face of climate change.

In conjunction with policy option three, we also wish to propose the creation of a network of **Climate Change Sister Cities**, to link communities based on their 2050 climates. These connections would facilitate information exchange between municipalities, as well as foster local awareness the future of London’s climate.

Finally, to reduce air quality impacts from pollen (which increases with rising temperatures), TFAC recommends integrating OPALS ratings into the Tree Planting Guidelines. In addition, the City should locate low-pollen species and/or female trees in areas where people are more likely to have respiratory problems (e.g. around hospitals, retirement homes, etc.)

City of London Planting Strategy

Draft Outline

In September 2015 the TFAC recommended that staff submit a draft outline of the proposed planting strategy for review by the TFAC with a view to finalising the outline after consultation with the TFAC.

Items listed here may or may not appear in the final Planting Strategy.

PLANTING STRATEGY – DRAFT OUTLINE

1. Introduction

- Why a Planting Strategy is necessary
- Previous Council directive(s)
 - e.g. original replacement targets for EAB removals
- Known public expectations from UFS survey and other sources
- Emphasise long term, proactive approach to achieving goals and targets
- Goes hand in hand with protecting more and maintaining better
- Replacing and increasing tree canopy cover

2. Goals – linked to Urban Forest Strategy (see pages 25 - 28 of UFS)

- Achieve canopy cover targets (28% by 2035; 34% by 2065)
- Develop achievable tree canopy cover targets by Placetype (London Plan)
- Identify plantable space (public and private)
- Prioritise, and coordinate, community and other plantings across public and private lands
- Revise City By-laws and policies to support tree canopy targets

Other goals not explicitly described in UFS recommendations but relating closely to them

- Develop criteria to guide or define “right tree, right place” – species/cultivar selection is a design – function decision process (*the largest stature tree possible for that location might not be the correct choice*)
- Manage expectations and demand
- Support Million Tree Challenge
- Use Planting Strategy as a rationale for removing barriers to success (*barriers may be identified in the Planting Strategy, but the Solutions are beyond its scope; may take years to develop and implement the Solutions*)
- Identify planting preferences by geographic area (from Master Plans, etc.)

- Mitigate impacts of climate change and Urban Heat Island Effect
- Mitigate risk of human health concerns
 - e.g. shade trees reduce skin cancer and heat-related complaints; tree canopies reduce respiratory complaints
- Effective strengthening of City partnering and afforestation efforts with external stakeholders

3. Current Program and Budget

- What City does now, with what budget
- Planting statistics (years x to y; trends)

4. Issues – City land/programs

- Opportunities to plant on City lands likely to diminish over time
- Competition for space: Boulevard parking permits, encroachments, retrofitted sidewalks, street furniture, utilities, infrastructure renewal, road widening and rapid transit
- NIMBY
- Budget
- Quality of stock
- Skilled labour
- Availability of species

Issues - private land/programs

- Existing City policies need revision to ensure and support greater tree retention, or significant tree planting on private lands
- NIMBY
- Property Standards By-law? Zoning By-law, Boulevard Tree By-law and Tree Conservation By-law, etc. need revision to ensure replacement tree(s) are required and planted
- Availability and accessibility
 - o Cost of trees, shovels, mulch; also related with disposable income
 - o Transit, transport, getting trees safely home
 - o Ill health, disability
- Education – what tree should be planted?
- Low priority, relative to other household and quality-of-life decisions
- Positive note: demand (= willingness to plant) exceeds supply!

5. How are we going to achieve goals?

- kick-start the early years: Parks – plant and maintain trees (e.g. \$100K in year 1)
- increase street tree planting significantly (e.g. 4500 trees in 2016) – and sustain these increased levels
- retro-plant City parking lots (more expensive, \$15k per tree?)
- identify plantable spots

- prioritise replacement of street trees that have already been removed and not replaced e.g. ash trees removed due to Emerald Ash Borer
- give away or subsidise trees
- revise policies and By-laws to support tree canopy conservation and expansion
- plan ahead and better coordinate efforts with internal Divisions and external stakeholders e.g. Conservation Authorities, ReForest London, School Boards, Provincial/Federal Ministries and agencies with London offices or land, First Nations, development community, residents, special interest groups, community programs, industrial landlords and industry owners, commercial enterprises (e.g. through Chamber of Commerce) and agricultural (e.g. Farmers unions)

6. Stakeholder/Participation

Key Persons – public and private sectors; their position, role in Planting Strategy

- strengthening relationships and removing bureaucratic and other barriers to the tree-planting community.
- cross-Divisional support
- commitment to long term budgets
- seeking and securing grants
- celebrate success

APPENDIX

Products and Actions (*italics*) – guided by UFS Implementation Plan Recommendations (numbered, bold) for Years 2015-2016 and 2017-2020

Short Term 2015-2016

PLANT MORE

1.1 Establish canopy targets

Action: Develop achievable tree canopy cover targets by Placetype (London Plan)

1.2 Increase parking lot shade trees

Action: Develop and implement parking lot planting plans for shade trees and stormwater management

Action: Retro-plant City parking lots

Action: Amend policies and By-laws (Site Plan process, Zoning By-law, etc.) so trees are required, planted, retained and maintained, and replanted

1.3 Prepare a planting strategy

Action: This document

Action: Five-year strategic planting plan in detail, beyond 5 years in lesser detail

Action: Utilise existing species information or requirements from existing Secondary Plans, Heritage Conservation District Master Plans, other Master Plans etc. to develop and achieve area-specific goals (some Plans already describe preferred species, and UFS speaks to creating distinctive neighbourhood with trees e.g. size, shape, seasonal colour; existing Design Guidelines, tree planting guidelines, etc. may require revision to reflect these goals)

1.4 Implement no net loss policy

Action: Create no net loss policy; revise policies, By-laws, standards, etc. to support no net loss policy

2.1 Identify plantable space opportunities

Action: Identify plantable spots – private and public

Note: some is already being done through staff, and ReForest London community Tree Captains

Action: Five-year plan in detail, beyond five years in lesser detail

Action: City Natural Areas – plan to expand, and link

Action: Mapping, prioritising of tree vacancy plans – by geographic grid/watershed/park/neighbourhood/street

2.2 Develop planting standards

Action: Revise policies and By-laws to support tree canopy conservation and expansion – private and public sectors

Action: Revise planting standards to include other related management requirements

e.g. inspection of public planting locations and not less than annual inspections during warranty period, and an aftercare program (structural pruning, weeding, watering, mulching, fertilising, timely removal of ties, stakes, guards, etc.)

2.4 Prepare 5 year community planting plan

Action: Five-year strategic planting plan in detail, beyond five years in lesser detail

3.9 Ensure suitable species for harsh conditions

Action: Develop protocol and species lists, and consider climate change preparedness (urban areas will be even warmer due to urban heat island effect)

Action: Consider soil quality and quantity (also tied with right tree, right place - cheaper to use what you have than amend to what you need)

Action: Commitment/support to green industries – nurseries, growers, landscapes, arborists etc. (predicting of demand) – contract growing

Action: Enforce contracts – e.g. accept no substitutes

Action: Work with all stakeholders to disseminate and apply scientific knowledge to better select species for site and environmental constraints

Action: Establish protocols or criteria for use of exotics or native species based on vulnerability and related risk assessments

PROTECT MORE

6.1 Revise policy to better use topsoil for planting sites

Action: Consider soil quality and quantity (also tied with right tree, right place - cheaper to use what you have than amend to what you need)

Action: Develop protocol and species lists, and consider climate change preparedness (urban areas will be even warmer due to urban heat island effect)

Action: Revise policies and By-laws

11.1 Conduct plantable space analysis

Action: Identify plantable spots – private and public

Action: Collate all available data by geographic area (census, orthophotos, etc)

Action: Prioritising tool for public and private lands

- may be an algorithm e.g. inverse income x human population x tree vacancy x inverse existing tree canopy cover. Priority must mean priority (for City initiatives at least) – especially with limited resources - recognising competing interests and requests

15.1 Develop incentives for private tree planting

Action: give away or subsidise trees e.g. free tree or voucher program – possibly working with realtors and City Divisions that welcome newcomers to London and work with low income families

Action: Consider Toronto’s LEAF and similar programs to plant trees for free on private lands including rear and front yards and City-owned boulevard/front yard

Action: Existing City policies and By-laws need revision to ensure and support significant tree planting on private lands or by private persons on City lands

Action: Rewards program (recognition of outstanding achievements under the Strategy)

Action: remove barriers especially cost

- trees are a low priority and too costly for new homeowners, young families, immigrants, disabled, sick, etc. but these are the target sectors in the community that will reap the most benefits

Action: develop incentives with stakeholders interested in expansion of local nut and fruit orchards

- e.g. Ferrero Rocher, Ministry of Agriculture, Food and Rural Affairs, farmers, farmers markets and small businesses producing value-added products
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17.5 Develop a comprehensive communications strategy

Action: Roll out public communication/education strategy

Medium Term 2017-2020

PLANT MORE

1.6 Develop creative design solutions to include trees

Action: Develop and implement City parking lot planting plans for shade trees and stormwater management

Action: retro-plant City parking lots

Action: Institutional – follow Toronto's shade tree example for schools (skin cancer threat to young persons); work with MLHU and others to achieve target canopy cover and/or forest immersion zones for hospitals, hospices and shelters

Action: Consider Neighbourhood landscape character. Reflect historic significance of names e.g. Sherwood Forest?

Action: Consider individual streets. Reflect historic significance of names e.g. Dufferin Avenue used to be Maple Avenue; but Palmtree Avenue is probably a misnomer!

2.5 Enhance plantable space in urban hot spots

Action: Existing City policies need revision to ensure and support greater tree retention, or significant tree planting on private lands

Action: retro-plant City parking lots

Action: urgently replace street trees that have already been removed and not replaced e.g. Emerald Ash Borer ash trees

Action: Commercial/Industrial – incent and require retro-planting of hardscapes to achieve tree canopy targets where no other planting option exists

2.6 Improve plantable space in City infrastructures

Action: Develop and implement City parking lot planting plans for shade trees and stormwater management

Action: retro-plant City parking lots

Action: Revise policies and By-laws to support tree canopy conservation and expansion

2.7 Increase tree planting to meet targets

Action: This document and implementation thereof

3.1 Move to multi-year growing contracts

Action: Commitment/support to green industries – nurseries, growers, landscapes, arborists etc. (predicting of demand) – contract growing

3.3 Develop a native seed project

Action: Commitment/support to green industries – nurseries, growers, landscapes, arborists etc. (predicting of demand) – contract growing

3.4 Encourage food bearing trees in community gardens

Action: Commitment/support to green industries – nurseries, growers, landscapes, arborists etc. (predicting of demand) – contract growing

Action: Five-year strategic planting plan in detail, beyond five years in lesser detail

Action: remove barriers especially cost

See 2.4 and 9.3

9.3 Provide annual funds for community plantings

Action: remove barriers especially cost

Action: Promote and expand TreeMe grant and consider revisions to eligibility

PROTECT MORE

4.2 Manage natural areas to enhance biodiversity

Action: Identify plantable spots

Action: Develop protocol and species lists, and consider climate change preparedness (urban areas will be even warmer due to urban heat island effect)

Action: Revise policies and By-laws to support tree canopy conservation and expansion – private and public - include inspection of public planting locations and not less than annual inspections during warranty period, and an aftercare program (structural pruning, weeding, watering, mulching, fertilising, timely removal of ties, stakes, guards, etc.)

MAINTAIN BETTER

9.4 Reduce turf grass with more trees and less mowing

Action: Revise policies and By-laws to support tree canopy conservation and expansion – private and public - include inspection of public planting locations and not less than annual inspections during warranty period, and an aftercare program (structural pruning, weeding, watering, mulching, fertilising, timely removal of ties, stakes, guards, etc.)

Action: City Parks – prioritise and maximise tree planting in planned use/park design, ensure planted trees survive and thrive

Action: Enforce contractual warranty, guarantees and achieve satisfactory survival rate

Action: Remove barriers to success e.g. tracking, monitoring and reporting system (adaptive management) and measure success in achieving goals - to include measuring mortality rate –

Action: Community programs: Develop and implement aftercare program and replacement planting to achieve satisfactory survival rate

10.5 Estimate mortality rates and project losses

Action: Remove barriers to success e.g. tracking, monitoring and reporting system (adaptive management) to measure success in achieving goals - to include mortality rate

11.4 Model canopy growth to refine planting goals

Action: Issue Request for Proposal for modelling of canopy growth

Action: Identify plantable spots

Action: Develop achievable tree canopy cover targets by Placetype (London Plan)

ENGAGE THE COMMUNITY

14.1 Establish a nursery growing contract for tree supply

Action: Commitment/support to green industries – nurseries, growers, landscapers, arborists etc. (predicting of demand) – contract growing

15.2 Develop neighbourhood tree plans

Action: Consider Neighbourhood landscape character; research and reflect heritage significance of names

e.g. Oak Park, Oakridge

Action: Identify plantable spots

Action: Five-year strategic planting plan in detail, beyond five years in lesser detail

Action: remove barriers especially cost

Action: Promote and expand TreeMe grant and consider revisions to eligibility

Action: Develop protocol and species lists, and consider climate change preparedness (urban areas will be even warmer due to urban heat island effect)

Action: Community programs: Develop and implement aftercare program and replacement planting to achieve satisfactory survival rate

Action: Roll out public communication/education strategy

See 2.4 and 9.3