



City of Takoma Park Environmental Sustainability Plan

Methodology Memorandum

February 1, 2013

1.0 Introduction

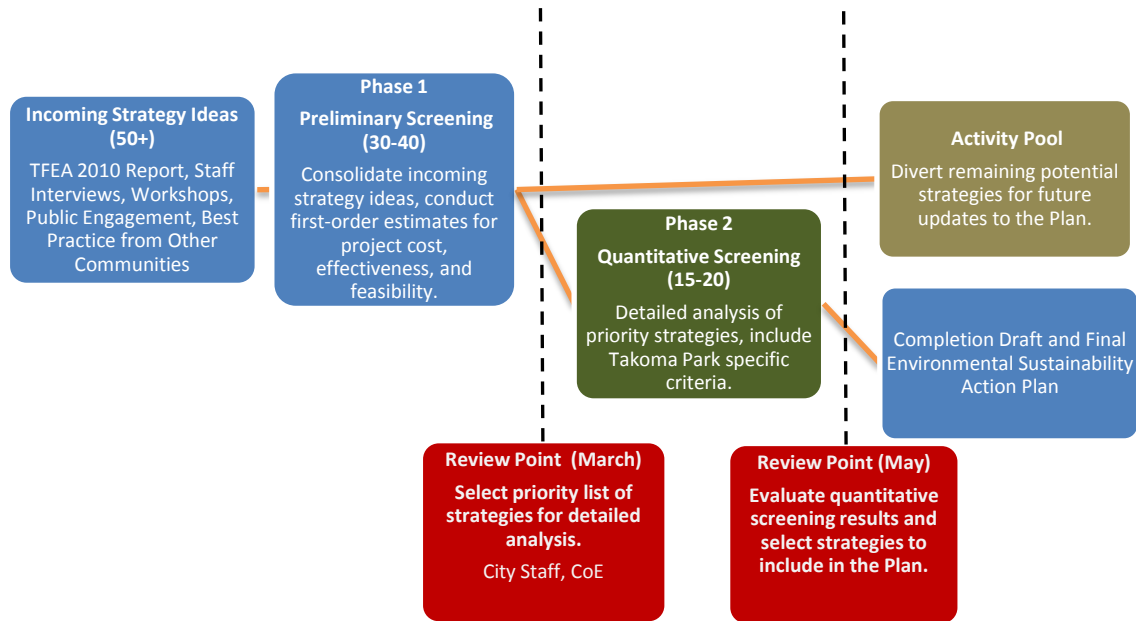
This Memorandum outlines a proposed methodology for quantifying and comparing strategies for the Environmental Sustainability Action Plan as required in our contract documents. As discussed in our kick-off meeting, it is difficult to present a methodology for comparing strategies as an isolated topic, since strategies are part of a bigger picture framework for the Plan, derived from an iterative process. As a result, in addition to a methodology for analyzing and comparing strategies, this memorandum also includes a methodology for developing the overall Plan framework and associated topic areas to be covered, as well as a methodology for aggregating strategies into an assessment of cumulative impacts.

2.0 Methodology for Quantifying and Comparing Strategies

We will work with the City and Committee on the Environment (CoE) to develop a number of Plan strategies that support the desired outcomes for the Plan that will be articulated in its goals. Strategies embody the actions, practices, or systemic approach that will be taken to validate and make progress toward the Plan's goals. Strategies are intended to be an intermediary step between goals and implementation steps. It is at the strategy level where potential costs and benefits, both in financial as well as resource efficiency terms, can most effectively be quantified to help scale, prioritize, and filter potential measures. For any given goal there may be several supporting strategies.

The City currently has over 50 potential strategies that may be considered from the TFEA Final Report and other sources. Additional strategies will be identified through stakeholder interaction. To screen these strategies we will employ a two-phased screening process, as shown in the following figure. The first step in this process will be to consolidate strategies that are similar or complimentary to allow for an efficient Phase 1 review. This will facilitate identification of the most appropriate strategies to include in the initial version of the Environmental Sustainability Action Plan, while also creating a process to move other strategy ideas to an "activity pool" to be considered in future iterations of the Plan.

As shown in the figure, all potential strategy ideas will be reviewed and a first-order, high-level screening applied to them to evaluate estimates of cost, effectiveness, and feasibility. This will help identify a smaller list of priority strategies to which more rigorous quantification can be applied.



An important component of identifying preferred strategies, defining metrics, and tracking progress is the quantification process. Quantification, where possible, provides the City, decision makers, and the community a clear picture of the implications of proposed activities. This quantification process is generally based on the following input factors:

- Input from City staff and other relevant stakeholders, including information from similar existing projects;
- Locally relevant demographic, utility, and other data;
- Industry contacts, references, and rules-of-thumb;
- Case studies from other communities; and
- Professional experience of the project team.

The complete Phase 2 quantification, screening, and prioritization process will bring together quantitative data such as cost or GHG emissions reductions with qualitative screening criteria and priorities that are relevant to Takoma Park. This process will help the City, CoE, and decision makers evaluate the benefits and tradeoffs of various strategies being considered for the Plan so that the most feasible and effective actions can be identified. The following criteria are proposed as Phase 2 screening criteria for proposed strategies:

- Sector(s) Impacted and Penetration Rate: Commercial, residential, industrial, institutional
- Environmental Benefit: Tons of carbon dioxide equivalent (MTCO₂e) as a cross-cutting metric, perhaps other metrics for key topics that don't have a direct greenhouse gas impact such as stormwater
- Implementation Cost: Dollars spent and who pays (public/private)
- Cost Savings: Dollars saved and who saves (public/ private)
- Cost Efficiency: 10-year net cost per benefit
- Staff Resources Required for Implementation

- Social Justice Implications: Impacts to low income, minority populations
- Timeframe: Short (0-2 years), medium (2-5 years), or long-term (focus on short- and medium-term)
- Community Resources Required for Implementation: Funding, staffing, partnerships

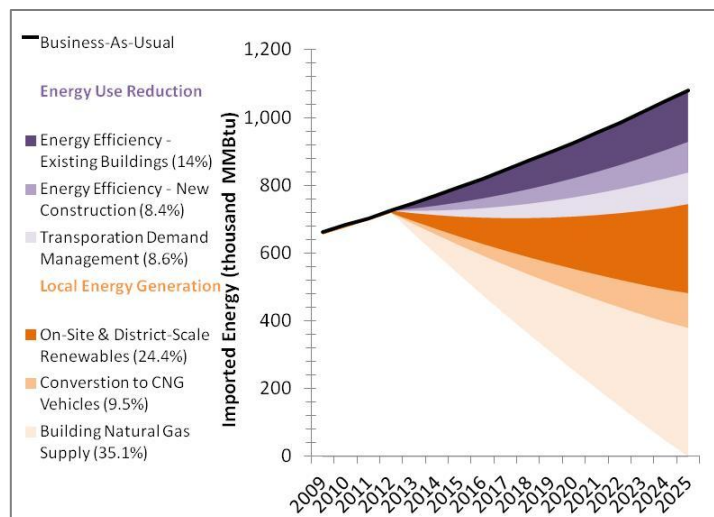
An Excel-based decision support matrix will be developed and populated with these screening criteria. Priority strategies from the Phase 2 process will then be added to the matrix and criteria applied to them. Results will then be evaluated and recommendations made as to which strategies to include in the Plan. Those priority strategies that are not included in this first iteration of the Plan will be diverted to the “activity pool” of strategies to be considered in future Plan updates.

3.0 Methodology for Evaluating Contribution of Strategies toward Plan Goals

In addition to applying the quantification, screening, and prioritization process to individual strategies, we will also evaluate bundles of strategies and their cumulative impact/benefit for the Plan. This can be accomplished by defining scenarios that describe and depict varying approaches to achieve outcomes. These scenarios could include, as some examples:

1. **“Average” implementation:** Implement strategies at moderate levels even if it means accepting a gap between the cumulative effect of the strategies and their ability to meet desired Plan goals.
2. **“Aggressive” implementation:** Implement strategies at aggressive levels by adjusting the assumed implementation/penetration rate and/or projected impact on goals. A more aggressive approach might increase implementation costs but can help minimize or eliminate any gap between strategies and desired goals. We understand that the City Council may prefer to take an aggressive approach to implementation.
3. **Relax goals:** If any of the goals are found to be too aggressive or not in line with other priorities, make adjustments as needed.
4. **Introduce additional strategies:** If the strategies as originally developed are not generating the desired results, consider adding additional strategies, including some that may not be under the City’s direct control.

The cumulative impact of strategies used to conduct such scenario analysis will be quantified by developing a “wedge analysis” that will be applied to understand what “Business as Usual” looks like if the City takes no further action, as well as the contribution of individual strategies toward the overall goals of the Environmental Sustainability Action Plan. This type of



evaluation creates an effective visualization of the Plan that includes - in the context of energy in this example - current energy use, future growth in energy, and the relative and cumulative impacts of individual strategies. The wedge analysis will also be used to evaluate various scenarios as discussed above.

4.0 Methodology for Developing a Plan Framework

Another key step in the planning process is to establish an overall framework and organization for the Environmental Sustainability Action Plan. This framework will be refined by both reviewing other City plans for potential alignment opportunities as well as facilitating dialogue with the CoE and City staff during on the onsite workshop.

The framework will help define both terminology and structure of the Plan, from a unifying vision or policy to goals, strategies, and implementation steps. Having a Plan framework that is consistent in terminology and organization with other City plans will help make the Plan relevant to Takoma Park's citizens and encourage implementation. In Takoma Park, this might mean aligning the Environmental Sustainability Action Plan framework with the elements of the City's Strategic Plan – goals, assumptions, strategies, priority projects/initiatives, and key indicators as one example.

Another step in organizing the Plan will include defining topic areas around which to organize goals and strategies. In terms of Plan topic areas, the Environmental Action Task Force's 2010 report provides good guidance on topic areas of importance to the City that could be used for the Plan's topic areas – air quality, buildings, climate change, energy, habitat, stormwater, transportation, and waste. We understand that the City would like to place emphasis on certain topics of greater interest, such as climate change, buildings, energy, transportation, and stormwater. Within the Plan framework, these topic areas will be emphasized in the initial version of the Plan, while the framework will offer the flexibility to add other topics in future planning and update cycles.

The following figures summarize both the overall process of developing the Plan as well as a potential framework for the Plan. The Plan will be built both “top down” – framed by policy and guiding principles and aligned with current City plans – as well as guided by a set of topic areas and goals developed through a facilitated process with City staff and the CoE. It will also be built “bottom up” with key input from a baseline analysis of current impacts and practices, key interviews and outreach activities, best practices from other communities, and workshops with City staff and the CoE. This bottom-up approach will culminate in development of a number of prioritized and quantified strategies that support the Plan's topic areas and goals.



The following table shows in more detail how the framework for the Plan would be structured, noting the following:

- The City’s priority topic areas
- A desire to focus short- and medium- term goals on a 2 to 5 year time horizon
- A preference for quantitative goals where appropriate

Vision and Policy: An Overall Vision and Policy for Community Sustainability		
		Focus Areas: The City’s Priority Topic Areas for Sustainability
		Climate Buildings Energy Transportation Stormwater
Short-Term	2 to 5-Year Goals	Quantified “SMART” Goals Where Feasible: Specific, Measurable, Achievable, Realistic, Time-Bound
	Strategies/Initiatives	Specific steps for achieving goals, quantified and screened using the criteria in Section 2.0. Bundles of strategies evaluated using wedge analysis.
Long-Term	Stretch Goals	Long-term, aspirational goals for sustainability.
Annual Ongoing	Actions, Practices, Opportunities	Specific actions, resources, funding opportunities, and partnerships to convert strategies to action.
	Metrics/Indicators	Clear, relevant, and meaningful indicators to measure progress.
	Platform for Reporting and Revising	Direction for an ongoing process for continual improvement with reporting on implementation and performance and revisions to the Plan.