Town of Lake Park
Right-of-Way Tree Inventory and Swale Conflict Assessment Program

Technical Program Framework

Objective:

To develop a consistent, map-based inventory of trees located within Town right-of-way, roadside swales, public parks, and other public landscape areas, with emphasis on tree health, species diversity, infrastructure conflicts, maintenance needs, and potential impacts to stormwater conveyance. The program is intended to support data-driven urban forestry management, swale restoration, sustainability planning, public safety, and community beautification.

Program Purpose:

The Town's tree canopy is an important public asset. However, trees located in or near drainage swales, sidewalks, utilities, driveways, and roadway corridors must be evaluated using both urban forestry and public infrastructure criteria. This program establishes a practical framework for collecting reliable tree data, identifying priority conditions, coordinating with stakeholders, and using the information to guide maintenance, policy, budget, and future planting decisions.

1. Inventory Scope:

- Town-maintained right-of-way, including roadside swales and roadway corridors.
- Sidewalk corridors, driveway interfaces, curb lines, and utility conflict areas.
- Public parks, streetscapes, municipal facilities, and other Town-managed landscape areas.
- Priority corridors where drainage, maintenance access, sidewalk condition, or roadway safety concerns have been identified.

2. Required Data Fields:

- Species identification, including common name and scientific name where available.
- Diameter at breast height (DBH), measured in inches using a consistent field method.
- Approximate height and canopy spread.
- Tree health and condition rating, using a defined scoring scale.
- Global Positioning System (GPS) location or mapped point location suitable for Geographic Information System (GIS) integration.

- Observable defects, including decay, dead limbs, poor structure, disease indicators, root conflicts, or storm damage.
- Maintenance needs, including pruning, monitoring, removal evaluation, root conflict review, or arborist assessment.
- Infrastructure conflict indicators, including conflicts with swale flow lines, drainage structures, sidewalks, driveways, utilities, roadway edges, signs, lighting, and sight visibility areas.
- Stormwater impact indicator, identifying whether the tree or associated planting appears to obstruct flow, alter swale grade, trap sediment, restrict maintenance access, or contribute to localized drainage issues.

3. Data Collection Method:

- Divide the Town into manageable survey zones based on corridors, neighborhoods, parks, and operational priorities.
- Begin with high-priority areas where known swale performance, sidewalk, utility, or maintenance conflicts exist.
- Use trained Public Works staff, qualified arborists, and, where appropriate, trained volunteers for non-technical data collection support.
- Use standardized field forms and photo documentation to maintain consistency across survey teams.
- Require quality control review of a sample of completed records before accepting each survey zone as complete.

4. Technology and Mapping Tools:

- Mobile Data Collection. ArcGIS Field Maps, i-Tree, TreePlotter, or comparable mobile applications may be used for field collection and real-time mapping.
- Geographic Information System Integration. Inventory points should be incorporated into the Town's GIS environment for mapping, analysis, dashboard reporting, and long-term asset management.
- Aerial Review. Drone imagery may be used where appropriate to support canopy assessment, corridor review, and identification of hard-to-access areas. Field verification should still be used for final tree-level records.
- Centralized Database. The program should maintain a centralized database capable of tracking tree condition, maintenance history, inspection dates, conflict indicators, and future updates.

5. Quality Assurance and Data Governance:

- Adopt a written data dictionary defining each field, acceptable values, measurement method, and required documentation.
- Use a consistent tree condition rating scale, such as Excellent, Good, Fair, Poor, Critical, or Dead.
- Require periodic data audits to confirm species identification, location accuracy, condition scoring, and conflict classification.

- Limit technical determinations, such as hazard rating or removal recommendations, to qualified staff or certified arborists.
- Maintain records in a format that can support future maintenance planning, budget development, public communication, and policy review.

6. Community Engagement Strategy:

- Develop public education materials explaining the role of swales as drainage infrastructure and the importance of proper tree placement.
- Use the Town website, newsletters, social media, neighborhood meetings, and Tree Board presentations to communicate program goals.
- Provide clear guidance on permitted and non-permitted planting within right-of-way and swale areas.
- Consider volunteer participation for tree identification support, public outreach, and neighborhood-level observations, provided that technical findings are verified by staff or qualified professionals.
- Highlight the benefits of healthy tree canopy while also explaining the operational need to protect drainage conveyance, public safety, and infrastructure.

7. Program Phases:

- **Phase 1, Planning and Standards Development.** Confirm data fields, condition rating criteria, conflict indicators, survey zones, technology platform, staff responsibilities, and quality control requirements.
- **Phase 2, Pilot Survey.** Conduct a pilot survey in a limited area with known tree, swale, or infrastructure conflicts. Refine the data collection method before expanding townwide.
- **Phase 3, Townwide Data Collection.** Complete phased inventory work by zone, beginning with priority corridors and then expanding to remaining public right-of-way and Town-managed areas.
- **Phase 4, Analysis and Reporting.** Prepare maps, dashboards, species summaries, condition summaries, conflict area lists, and recommended maintenance or policy actions.
- **Phase 5, Long-Term Monitoring.** Update records annually or biennially, or after major storm events, capital projects, roadway work, swale restoration, removals, or new plantings.

8. Expected Program Outputs:

- GIS tree inventory layer with mapped tree locations and core data fields.
- Townwide tree inventory summary report.
- Priority conflict map identifying locations where trees or plantings may affect swale function, sidewalks, utilities, roadway safety, or maintenance access.

- Recommended tree species guidance for appropriate right-of-way locations outside active swale conveyance areas.
- Public education materials supporting proper planting, swale protection, and long-term canopy management.
- Maintenance and budget planning information to support future trimming, removal evaluation, replacement planting, and swale restoration work.

9. Implementation Steps:

1. Confirm the desired software platform and data collection method.
2. Prepare the data dictionary, survey form, condition rating guide, and conflict indicator definitions.
3. Identify survey zones and establish a phased schedule.
4. Conduct a pilot survey and complete quality control review.
5. Revise the methodology based on pilot results.
6. Proceed with phased townwide inventory work.
7. Develop maps, summary reports, and recommended action items.
8. Use inventory findings to guide swale restoration, maintenance priorities, public education, and future right-of-way planting policy.

Professional Recommendation:

The Town should treat this program as both an urban forestry initiative and a public infrastructure management tool. A successful program should preserve and improve tree canopy while ensuring that swales, sidewalks, utilities, and roadway corridors remain functional, maintainable, and safe. The most effective approach is to begin with a focused pilot area, verify the data collection method, and then expand the inventory townwide using consistent standards.