

TREE REGULATION RESEARCH PROJECT FINAL REPORT

RESEARCH QUESTIONS:

1. Under SMC 25.11 (Tree Protection), are trees protected outside of development and during development?
2. Are current tree regulations providing the necessary protections to accomplish 30% tree canopy coverage goals?
3. Is tree loss being mitigated?

METHODOLOGY

- Consider situations where SMC 25.11 applies.
- Analyze tree regulations by zone.
- SDCI-issued documentation considered:
 - o Public Resource Center (PRC), over-the-counter – standalone tree removal approvals, not permits
 - o Type I MUP, construction permits
 - o Type II MUP, land use and construction permits
- Based on number of permits/decisions issued in each year (from 2008 to present), select a statistically significant sample to review.
- Review decisions and permit documents (aerials, applications, arborist reports, photos, and site plans) to determine the number of trees that existed on the site prior to development/site work, and after development/site work.
- Identify number of existing trees retained, number of trees removed, and number of newly planted trees.
- Conduct site visits to ground-truth data.

CHALLENGES

- The data universe is very large (over 100,000 permits, plus 3,477 PRC Over the Counter decisions) and there is no straightforward way to query for tree-related instances. (The Hansen system is not set up with a concise 'tree code' data collection protocol). Data gathering has been a lengthy iterative process. A concerted effort by multiple players/units has been required to ensure any level of certainty that we are collecting the correct data "Universe." Without this level of certainty, we run the risk of skewing findings. With the full data population collected and compiled, the next required step entails thoroughly cleaning the data so that it can be properly assessed.
- We decided to narrow down the data universe to be reviewed to Public Resource Center, Over-the-Counter Low Rise zones approvals (PRC/OTC-LR) and move forward with this Phase I of the larger project.
- To determine a statistically significant sample size, we worked with a few different confidence levels and confidence intervals. The PRC/OTC-LR approvals consisted of 152 decisions. Our statistically significant, simple random sample consists of 41 cases divided into equal percentage of annual cases, 2008-Present.
- There are a lot of data records coming in from various workgroups and impacting various zones. There are multiple internal stakeholders who determine how tree regulations are interpreted, applied, and enforced.
- We are just beginning to identify the first few pieces of a much larger puzzle.

FINDINGS

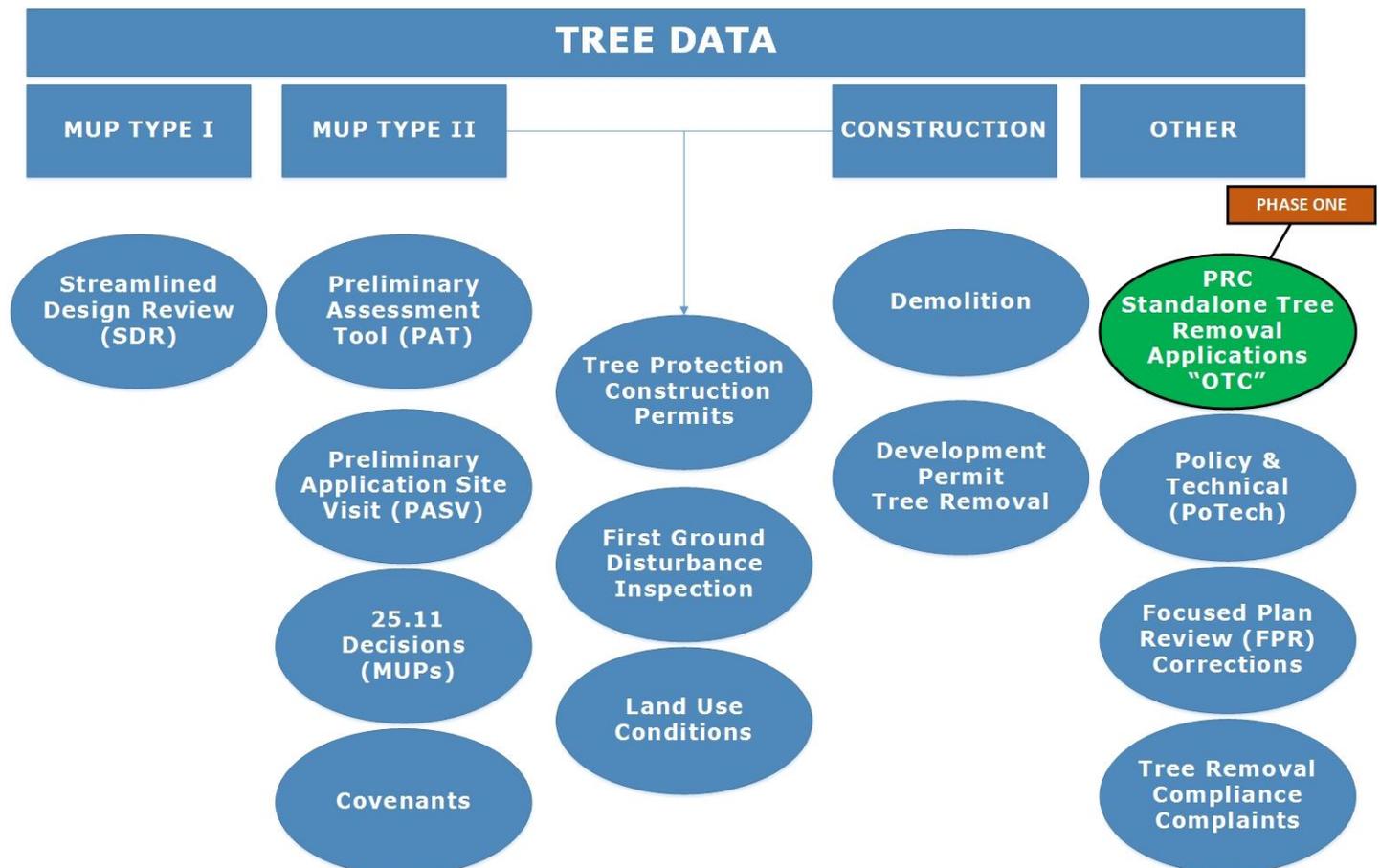
1. We realized that we needed to include SMC 23.44 because it offers tree *planting* requirements for development.
2. Public Resource Center over-the-counter data are standalone applications for removal of hazard trees and ECA revegetation. There is a separate process for tree removals within development projects.

3. The sheer size of the original data universe proved to be too large to be reviewed as part of this project. Time and resources required a phased approach with PRC/OTC- LR zone approvals being Phase I.
4. Project deliverables were adjusted to include analysis of PRC/OTC-LR zone approvals and creation of a replicable methodology/protocol to be used in subsequent phases.
5. There are overlaps in the two separate hazard tree removal processes. Standalone applications are being approved for tree removals on sites undergoing development in Lowrise zones.

NEXT STEPS: Review data flagged for Landscape Check/Tree Protection site inspection. Art Pederson requested this query as a means to ensure site inspectors are flagged to double-check that Tree Protection occurred per SMC.

RECOMMENDATIONS:

1. Wrap Phase I up by undertaking 21 site visits to ground-truth results.
2. Decide whether mining existing data with the current level of tree-related information would be worthwhile, if yes, then apply Phase I research methodology/protocol to the remainder of the tree data sets with a focus on Low Rise, Single- and Multi-family zones. Estimated level of effort required: Part-time (20 hours/week) for one year, or full-time (40 hours/week) for six months at the P&D Spec 2 level.
3. If mining current data is not considered worthwhile, then work on mapping the process that would provide meaningful data to fully understand development impacts on trees and incorporate the process into Hansen moving forward. Estimated level of effort required: 6-8 hours/week for a multi-disciplinary team (SDCI, OSE and perhaps SDOT) for six months.
4. Examine the development permit and standalone hazard tree removal application approval processes.



DATA:

City of Seattle tree data comprises a huge “Universe.” The tree regulation research project team met with multiple subject matter experts in multiple departments—Seattle IT, OSE, and SDCI—to determine pertinent data sets and data queries. According to one of the subject matter experts, “SMC 25.11 touches all permits and all zones inside and outside of development. We get 10,000 permits a year.” The scope of the project intended review of applications and permits ranging over the past ten years. That figure translates to a data population of more than 100,000 permits, plus thousands more Site Work over-the-counter (OTC) tree removal applications.

- Development permits where SMC 25.11 applied (2007-Present)
- Not only permits, but also Public Resource Center (OTC) standalone tree removal applications/approvals
- SMC 23.44.008 permits

The first data population selected for review—PRC OTC tree removal approvals—consisted of 3,477 records. These records were sorted into 88 zones and overlays. A pivot table for that data illustrated how a single permit A/P number could be repeated in 27 different zones and overlays.

Given the enormity of the data, the project team decided to focus only on PRC OTC tree removal approvals where SMC 25.11 applied in Lowrise (LR) zones. LR zones would be the first phase analysis of a much larger data population. All zones would be assessed in a repeatable methodology.

Evaluation of the selected sample set revealed that OTC approvals apply only to Hazard Tree removal applications.

Data populations for review:

- I. **Public Resource Center** tree removal (these receive internal arborist review, but these are not permits)
- II. **Type I MUP Decisions** – Including, but not limited to:
 - a. Zoning review for compliance with development standards on construction permits (Type I decisions/permits are *usually* construction only and *usually* start with a “6” in Hansen. All Type II thru Type V decisions/permits start with a “3” in Hansen.).
 - b. Streamlined design review (SDR) – not actually a MUP, but starts out like one with a “3” but results only in Guidance which is not a permit and is not “issued”. The only permit under SDR is usually a construction permit (starting with a “6” in Hansen). Note that SDR is the main exception about public comment – we do publish notice and request comment before giving guidance. In a few cases, some SDR projects ALSO require a Type II MUP, usually for SEPA. Most SDR projects (and many other residential construction permits) are usually followed after construction issuance with a Type II decision to subdivide the property and the units for separate ownership.
 - c. Lot boundary adjustments (LBA)
- III. **Type II MUP Decisions** – Including, but not limited to:
 - a. Environmental review (SEPA)
 - b. Design review
 - c. Variances
 - d. Administrative Conditional Use
 - e. ECA Variance
 - f. ECA ACU
 - g. Short plats
 - h. Shoreline substantial development