Developing a Centralized, Standardized Data Collection Framework for the Phoenix Shade Plan

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Introduction & Background

The Challenge

Heat represents one of Phoenix's most critical urban challenges, demanding comprehensive data-driven solutions. The city's ambitious Shade Plan requires robust, systematic data collection across multiple departments to effectively track progress, inform decision-making, and demonstrate measurable impact on community heat resilience.

Currently, departments operate in silos, submitting shade-related data through separate Excel spreadsheets. This fragmented approach creates significant inefficiencies and barriers to comprehensive citywide analysis and reporting.

Project Purpose

This initiative will support the Office of Heat Response & Mitigation in establishing a standardized, centralized framework for collecting and managing shade-related data across all participating city departments, enhancing both operational efficiency and strategic planning capabilities.

Key Issues, Goals & Research Questions

Primary Goals & Deliverables

Governance Toolkit

Comprehensive standardized processes (SoW), *submission templates (if needed), and clearly defined department liaison roles

Centralized Framework

Accessible, analysis-ready data infrastructure supporting decision-making

Core Research Questions

Municipal Best Practices

What proven strategies from other cities can inform Phoenix's standardized yet flexible data collection approach?

Governance Structures

Which organizational frameworks most effectively enable interdepartmental coordination and accountability?

Balance & Flexibility

How can processes maintain consistency while preserving necessary departmental autonomy?

Critical Need: Phoenix ranks among America's hottest cities, making the Shade Plan essential for expanding tree canopy, shade structures, and cooling infrastructure. Fragmented data practices currently hinder progress monitoring and reliable reporting.

Relevant Literature

This project builds upon established best practices in municipal data governance and interdepartmental coordination, with specific focus on climate adaptation frameworks and urban heat mitigation strategies.

City of Los Angeles Urban Forestry Data Strategy

Comprehensive approach to integrating tree canopy data into planning processes and public-facing dashboards

New York City Environmental Protection Initiatives

Case studies examining heat mitigation strategies and successful interdepartmental data collaboration models

Austin's Urban Forest Program

Standardized methodologies for inventorying and reporting tree canopy and green infrastructure data

State-Level Climate Resilience Frameworks

Examples from California and Washington detailing cross-agency data governance best practices

"Climate Data Stewardship" by Verhulst (2024)

Contemporary analysis of tensions and reflections in climate data governance implementation

*Literature review is preliminary and will be expanded through comprehensive analysis of source relevance and applicability

Methodology

This applied research project employs a qualitative approach combining process mapping, document analysis, and comparative case study research to develop practical, implementable solutions.

01

Stakeholder Mapping

Pinpoint the main contacts in each department and map out stakeholders to help build a solid foundation for the governance framework.

02

Process Analysis

The workflow analysis will look at how the Shade Plan data team currently gathers, organizes, and manages the information they get from different departments. The goal is to map out what's working, where things get stuck, and then use that to design a more centralized and consistent process that makes reporting and evaluation easier.

03

Document Analysis

Take a close look at the existing Shade Plan data, documents, and metrics already in place to get a sense of the baseline and spot areas where we can improve.

04

Best Practice Research

Look at how other cities are collecting and reporting data to see what strategies work well and where there might be creative ideas we can borrow.

05

*Pilot Implementation

If time permits, conduct limited testing with select departments to refine standards before broader rollout

Questions to Inform Next Steps

These questions are just a way for me to learn more about how Shade Plan data is being collected, what's working well, and where the biggest pain points are. The answers will also help me figure out who the key players are (stakeholder mapping) and start sketching out current workflows so we know what needs adjusting.

Magic Wand/Perfect World

- If you could wave a magic wand, what would this project give you in a perfect world? What would you love to be able to do that you can't do easily now?

Current State & Pain Points

- Can you walk me through how you're currently collecting and managing Shade Plan data across departments?
- In the current process, are there parts that actually work pretty smoothly, things you'd want to keep as they are or even expand on?
- Where do you find yourselves running into the most frustration or bottlenecks? When things break down or take longer than they should, what's usually at the root of it?

Stakeholders & Roles

- Who are the main departments that you're currently collecting data from or that contribute data to the Shade Plan efforts?
- Are there specific individuals or teams within these departments who serve as primary contacts or data stewards for shade-related information?

Communication & Support

- What kind of check-ins or updates would feel most supportive to you without being overwhelming as we progress with this project?

Project Timeline

The following 15-week implementation schedule balances thorough research with practical deliverable development, ensuring stakeholder engagement throughout the process.

Week	Course Assignment Due	Project Phase / Tasks
Week 1	Introductions	*Phase 1: Scope & Alignment* – Confirm project scope, align with client (Office of Heat Mitigation). Draft project charter (informal).
Week 2	Project topic for approval	*Phase 1:* Clarify goals, success metrics, resources. Finalize problem statement. Submit topic (Shade Plan Data Governance).
Week 3 (this week)	Prospectus (detailed project outline + work plan)	*Phase 1 → Phase 2 transition:* Build out detailed project outline (prospectus). Map out discovery activities (process analysis, interviews, best practices).
Week 4	Submit academic article for “translation”	*Phase 2: Review & Discovery* – Begin process analysis of Shade Plan data. Identify and propose article for translation (related to municipal data governance/climate adaptation).
Week 5	Translational article	*Phase 2:* Conduct stakeholder interviews + best practice research. Submit translated article.
Week 6	Draft background research & literature review	*Phase 2:* Continue lit review + stakeholder mapping. Submit draft lit review.
Week 7	Outline of final paper	*Phase 3: Process Design & Testing* – Map workflows & pain points. Begin drafting Standards of Work (SoW). Submit outline of final paper.
Week 8	Midterm progress report	*Phase 3:* Create draft templates for departmental data submission. Submit midterm progress update.
Week 9	Executive Summary	*Phase 3:* Pilot test SOW with 1-2 departments should time allow. Submit executive summary of project.
Week 10	Draft of final paper	*Phase 3 → Phase 4 transition:* Refine SoW + templates based on pilot feedback. Submit full draft report.
Week 11	Career evaluation reflection paper	*Phase 4: Toolkit Delivery* – Draft department liaison framework. Reflection paper due (career evaluation).
Week 12	Progress report	*Phase 4:* Refine governance toolkit, finalize deliverables. Submit progress report.
Week 13	PowerPoint presentation	*Phase 4:* Finalize governance toolkit and deliverable package. Submit presentation slides for client use.
Week 14/15	Final Paper	*Final Deliverable:* Submit finalized governance toolkit + written report (with executive summary, SoW, templates, liaison framework, and implementation guidance).

This structured approach ensures comprehensive research while maintaining focus on practical, implementable solutions that directly serve the Office of Heat Response & Mitigation's operational needs.