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**Project Proposal: Urban Green Space Accessibility Analysis**

**Abstract**

This project aims to analyze and visualize the accessibility of urban green spaces across a selected metropolitan area using Tableau's web mapping capabilities. By integrating demographic data with the locations and characteristics of parks and green spaces, this analysis will identify underserved neighborhoods and highlight disparities in green space access. The final delivery will be an interactive web map dashboard that allows users to explore accessibility metrics across different neighborhoods, providing valuable insights for urban planners, landscape architects, and policymakers to prioritize green space development in areas of greatest need.

**Overview**

Urban green spaces provide vital environmental, social, and health benefits to city residents. However, access to these spaces is often unequally distributed across socioeconomic and geographic boundaries. This project will quantify and visualize these disparities through spatial analysis and interactive mapping.

Using Tableau's web mapping functionality, I will develop a comprehensive analysis that overlays park locations with demographic data, walkability metrics, and public transportation routes. The analysis will calculate key accessibility indicators such as:

- Walking distance to the nearest green space
- Total green space area within 10-minute walking radius
- Green space quality indicators (amenities, maintenance, size)
- Green space access relative to population density
- Correlation between green space access and socioeconomic factors

The interactive dashboard will enable users to filter and explore different metrics, compare neighborhoods, and identify priority areas for green space development. The visualizations will include choropleth maps showing accessibility scores by census tract, point maps displaying green space locations with attribute data, and supplementary charts illustrating relationships between demographics and green space access.

This project addresses a critical need in urban landscape planning by providing data-driven insights that can inform more equitable distribution of green spaces. The findings could help landscape architects, urban planners, and municipal decision-makers prioritize investments in green infrastructure where they will have the greatest impact on underserved communities.

**Technology**

- Tableau Desktop for data preparation, analysis, and initial visualization design
- Tableau Public for publishing the interactive web maps and dashboards
- QGIS for preliminary spatial data preparation and analysis
- Microsoft Excel or Google Sheets for data cleaning and organization
- Python (optional) with pandas library for more complex data cleaning and joining tasks

**Data**

1. Park and green space inventory data (location, size, amenities, etc.) from municipal open data portals
2. Census tract or neighborhood boundary shapefiles
3. Demographic data (population density, income levels, race/ethnicity) from the U.S. Census Bureau
4. Sidewalk network data for walkability analysis
5. Public transportation routes and stops data
6. Street network data for routing and access analysis
7. Aerial imagery for visual reference and quality assessment of green spaces
8. Tree canopy coverage data (if available)

**Process/Methods**

1. Data Collection and Preparation:
    - Download and consolidate data from various sources
    - Clean and standardize attribute fields
    - Convert data to compatible formats for Tableau

2. Spatial Analysis:
    - Join demographic data to neighborhood boundaries
    - Calculate distance metrics between residential areas and green spaces
    - Develop an accessibility scoring system based on multiple factors
3. Tableau Development:
    - Import prepared datasets into Tableau
    - Create base maps with appropriate projections
    - Develop calculated fields for accessibility metrics
    - Design interactive filters and parameters
4. Visualization Design:
    - Create choropleth maps showing accessibility scores
    - Design point maps with size and color encoding for park attributes
    - Develop supplementary charts showing relationships between variables
    - Integrate all visualizations into a cohesive dashboard
5. Testing and Refinement:
    - Test interactivity and performance
    - Refine visual design for clarity and impact
    - Optimize for web publication
6. Documentation and Publication:
    - Document methodology and data sources
    - Publish final dashboard to Tableau Public
    - Prepare presentation materials

**Inspiration**

1. Trust for Public Land's ParkScore Index (https://www.tpl.org/parkscore)
2. Urban Institute's Spatial Equity Data Tool
3. National Recreation and Park Association's Park Metrics

4. ESRI's Green Infrastructure mapping examples
5. Tableau Public featured dashboards on urban planning and accessibility

**Potential Challenges**

1. Data availability and quality, particularly for smaller municipalities
2. Inconsistencies in how different datasets define neighborhood boundaries
3. Developing accurate walkability metrics that account for barriers (highways, water bodies)
4. Creating meaningful accessibility scores that incorporate multiple variables
5. Performance optimization for web-based interactive maps with large datasets
6. Balancing visual complexity with user-friendly interface design
7. Ensuring mobile responsiveness for the web dashboard
8. Accurately representing qualitative aspects of green spaces beyond quantitative metrics

**Timeline for Completion**

**Week 1**

- Days 1-2: Data collection, evaluation, and initial cleaning
- Days 3-4: Spatial analysis and metric development
- Days 5-7: Initial Tableau map creation and data integration

**Week 2**

- Days 8-10: Dashboard design and development of interactive elements
- Days 11-12: Testing, refinement, and optimization
- Days 13-14: Documentation, final adjustments, and publication

PLEASE NOTE THAT SINCE THIS IS DRAFT, I'M STILL RECONSIDERING CHANGES TO THIS PROJECT. THEREFORE, THE PROJECT IS SUBJECT TO CHANGE.