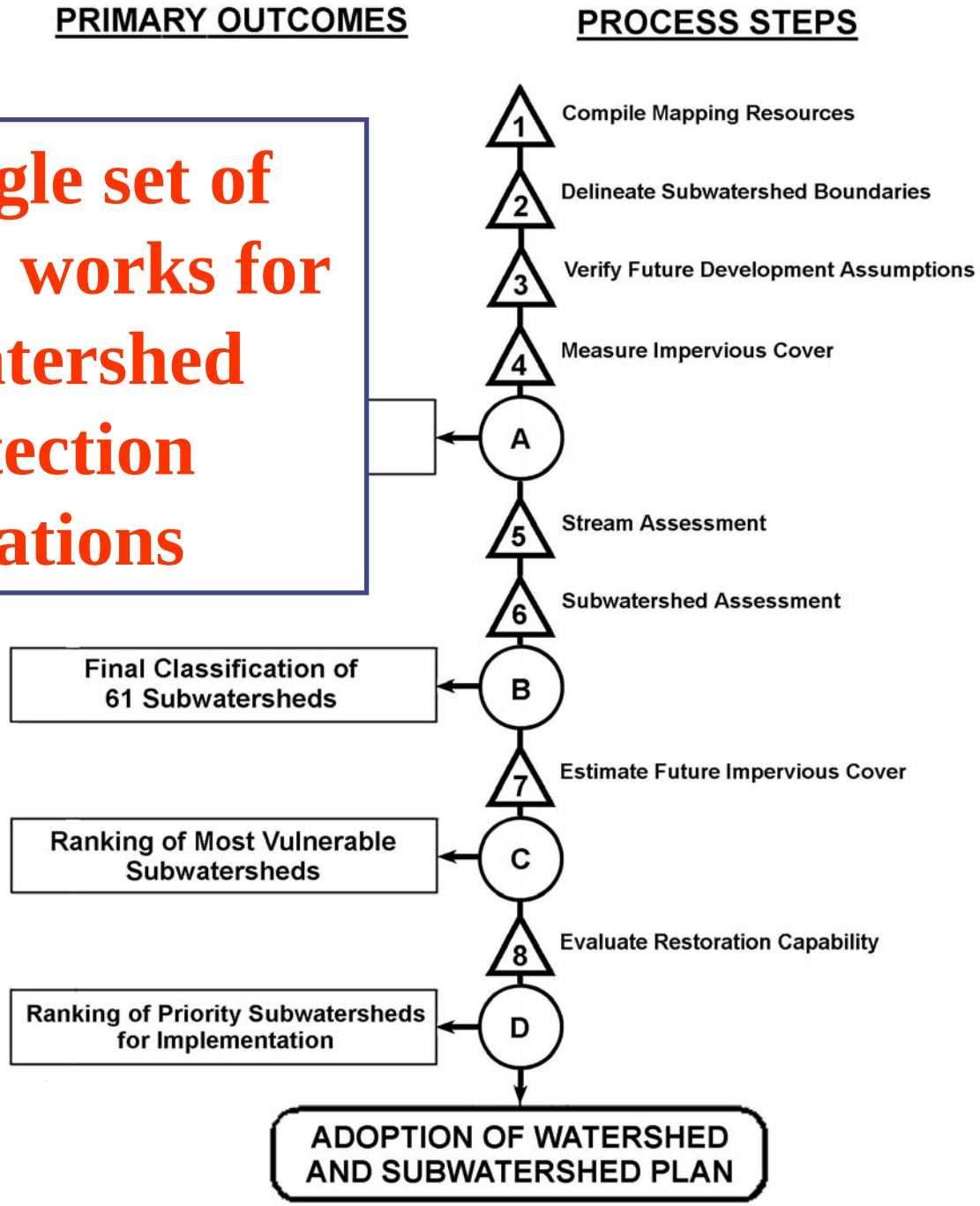
Basic Methods to Prepare Watershed Protection Plans

CENTER FOR WATERSHED PROTECTION

No single set of methods works for all watershed protection situations



Seven Steps of Local Watershed Planning

1. Assess needs and set goals ←
2. Identify vulnerable subwatersheds ←
3. Evaluate watershed conditions ←
4. Adapt protection tools ←
5. Apply early action projects
6. Adopt and implement plan
7. Develop long-term capacity

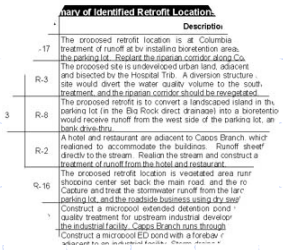

Whoa, I'm seeing shapes…
Desktop Analysis
Stakeholder Mgmt.
Management Outcomes
Field Assessments

Each Step Includes its Own Unique Methods for:

Desktop Analysis

Field Assessment

Stakeholder Involvement



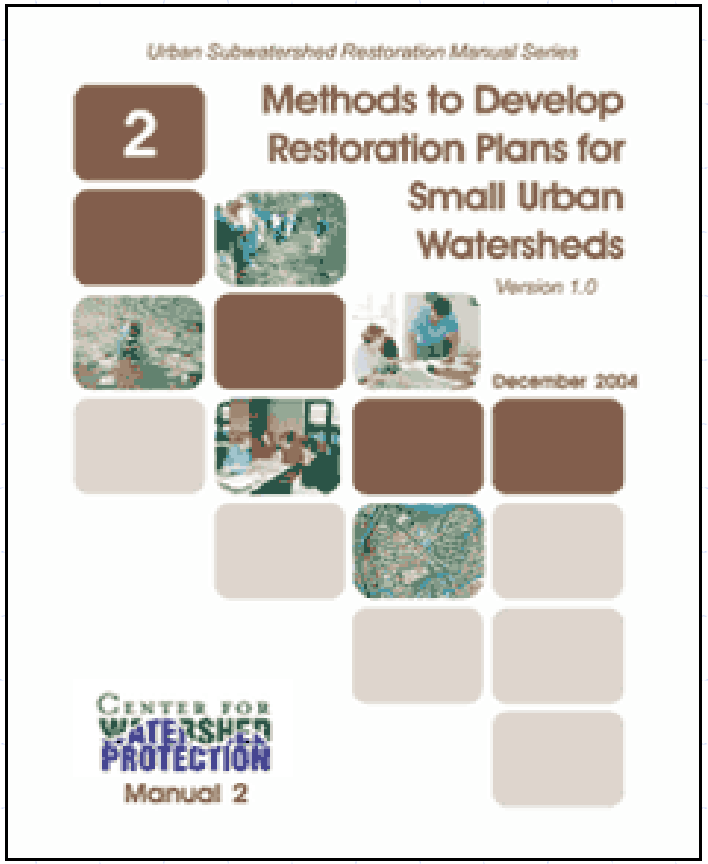
Management Decisions

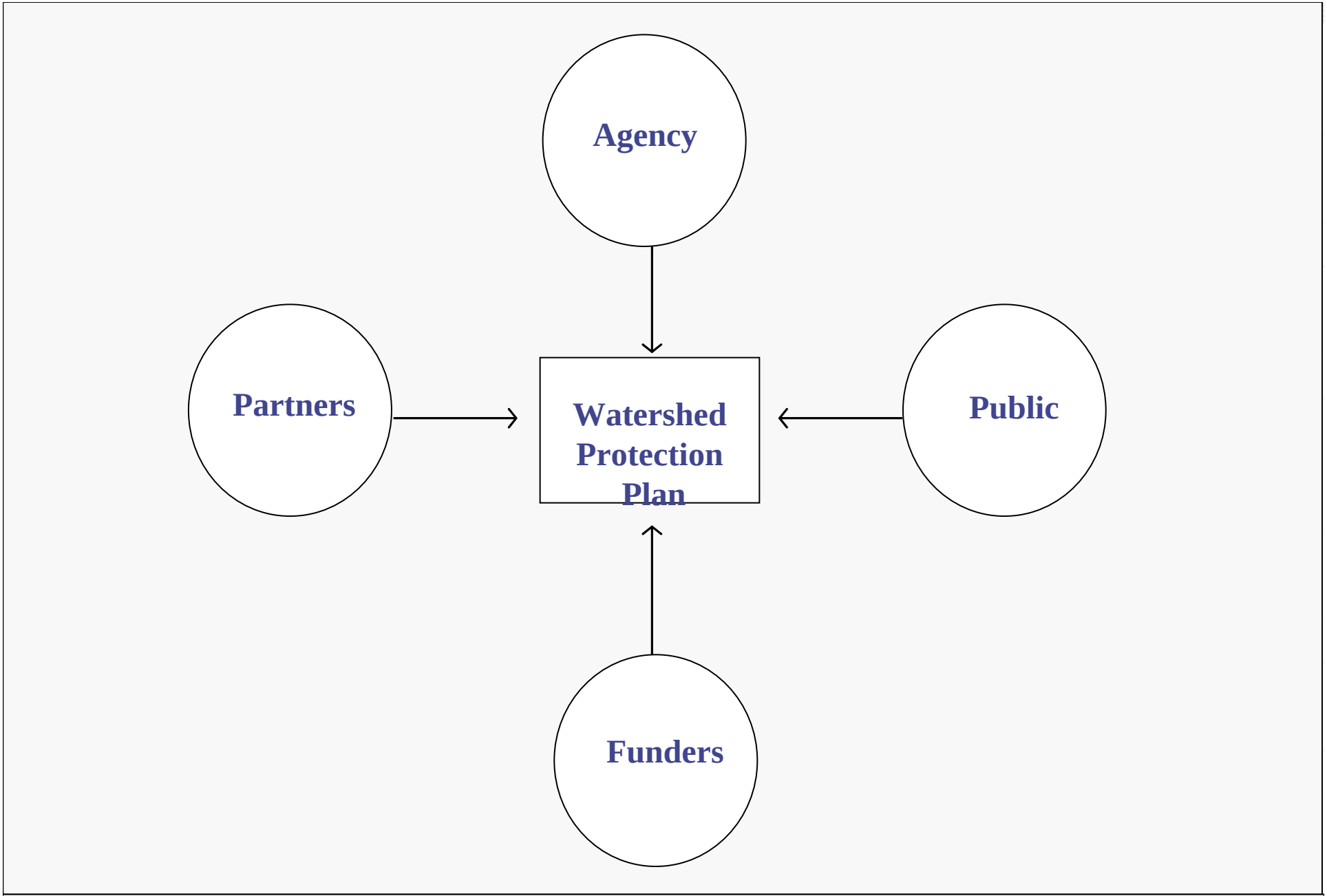
Manual 2. Methods to Develop Restoration Plans for Small Urban Watersheds

Step-by-step guidance to develop, adopt and implement restoration plans

Features 32 different desktop field, stakeholder, and management methods

Methods require some adaptation for watershed protection





Stakeholder Groups Involved in Protection Plans

Goals, Objectives and Indicators

Goals: broad statement of purpose about what protection will accomplish expressed in a slogan and understood by the public

Objectives: Precise statements of specific actions needed to achieve goals (who, what, how, where, when, how much) that give instructions to managers

Indicators: numerical and measurable indicators of watershed health linked to goals and tracked over time by scientists.

Step 2: Identify Vulnerable Subwatersheds

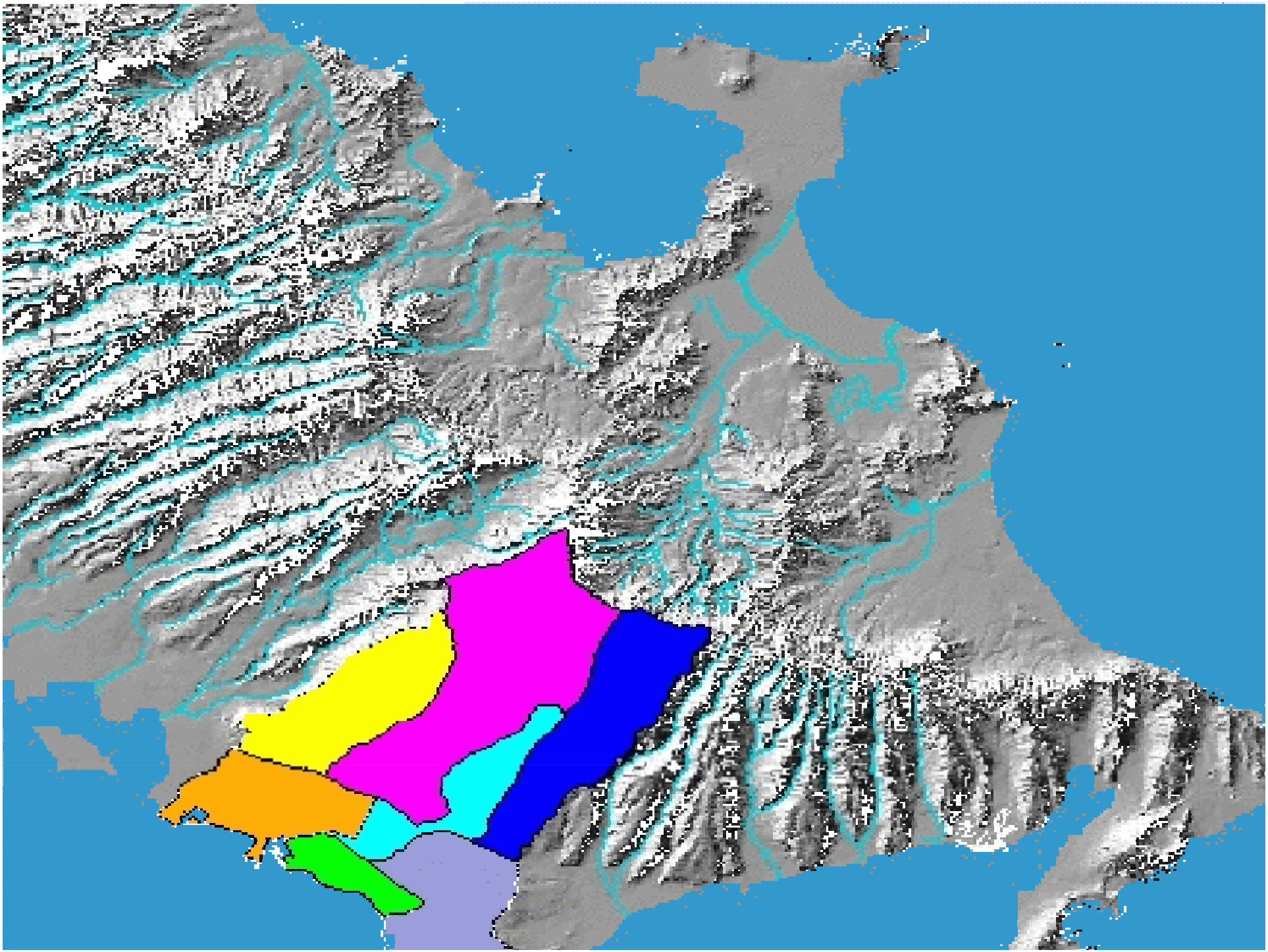
D: Watershed Land Cover Analysis *

F: Watershed Resource Inventory

S: Stakeholder Meetings

M: Watershed Vulnerability Analysis**

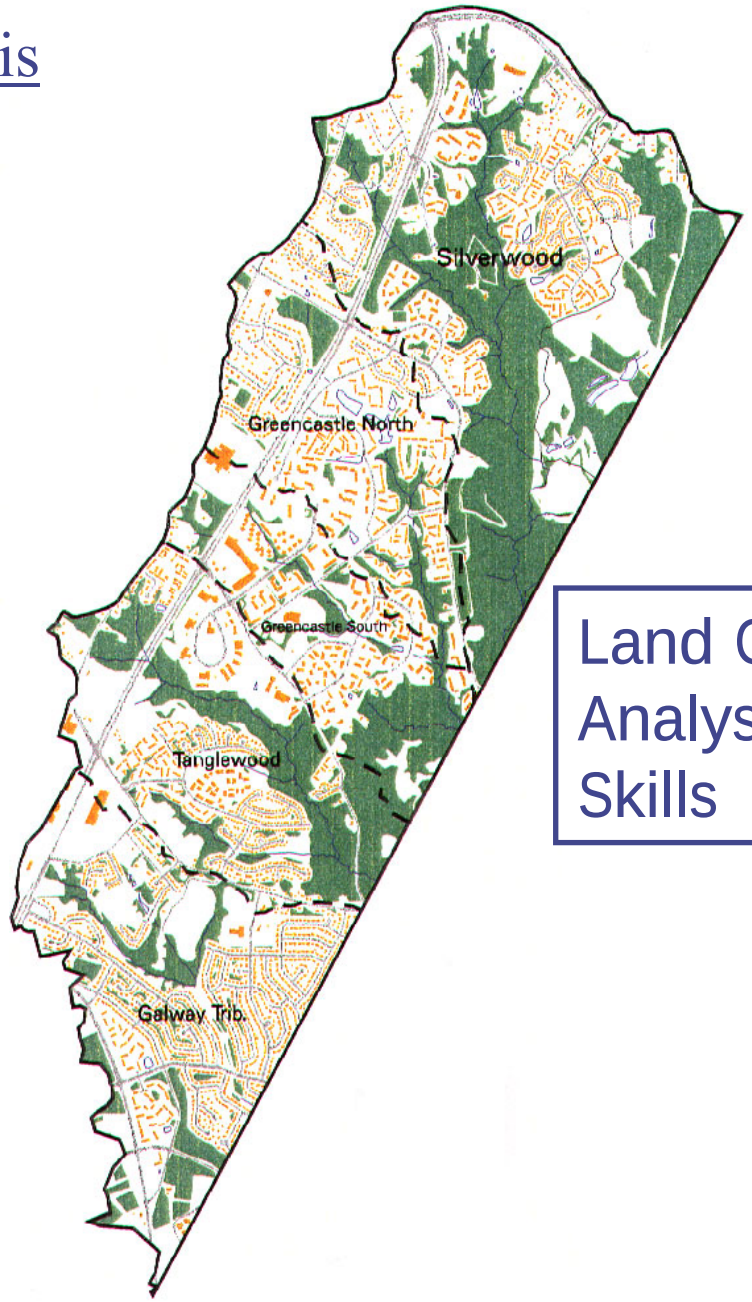
Purpose: narrow management focus to most critical resources and vulnerable subwatersheds



Watershed Land Cover Analysis

Translate Current Land Use and Future Zoning into Land Cover Units that can be used to compare conditions between subwaterheds:

- Impervious Cover
- Forest Cover
- Exposed Soil (Roads)



Land Cover Analysis Skills

Focus on Watershed Vulnerability Analysis

- Classifies subwaterheds (for regs)
- Identifies ones most vulnerable to development
- Forecasts future degradation
- Highlights the best subwatersheds and resources
- Targets which subwatersheds should be focus of early action projects

Watershed Vulnerability Analysis

1. Delineate watersheds/subwatersheds
2. Translate current land use into land cover IC-FC-SC-GC
3. Project future zoning into land cover
4. Derive subwatershed land cover metrics
5. Initial subwatershed classification (ICM)
6. Derive supplemental subwatershed metrics
7. Develop weighting and scoring system
8. Final subwatershed vulnerability list

Subwatershed Metrics

- Impervious Cover
- Forest Cover
- Wetland Cover
- Exposed Soil (less than 15% FC)
- Miles of dirt roads
- Downstream Reef Vulnerability
- Sediment Load

What might be some other metrics to use in Molokai watersheds?

- What are good ones that can be easily derived from existing data sources?
- Please provide contact info on your sources
- Do they exist in GIS?
- Is the mapping data recent?

Step 3: Evaluate Watershed Conditions

D: Design the Watershed Assessment

F: Conduct Rapid Field Assessments *

S: Landowner Interviews

M: Watershed Baseline Report

Purpose: acquire real watershed data to base sound planning decisions

Step 4: Adapt Watershed Protection Tools

D: Adapt Watershed Tools *

F: Apply to Real World Sites

S: Convene Roundtables to Gain Consensus

M: Draft Watershed Regulations *

Purpose: test and refine the development regulations needed to protect the watershed

The 8 Tools of Watershed Protection

8. Watershed Stewardship

1. Watershed Planning

2. Land Conservation

7. Non-Stormwater Discharges

3. Aquatic Buffers

6. Stormwater Management

5. Erosion & Sediment Control

4. Better Site Design

Center for Watershed Protection

There is a Method to Develop Watershed Regs

- Assess gaps in local protection capacity
- Understand future development patterns and plan review burden
- Adapt model ordinance to fill gaps
- Assess fiscal and staff impact to locality
- Investigate political pathway to adoption (and key barriers)
- Make persuasive case and choose best route to gain acceptance (e.g., roundtable)

Step 5: Apply Early Action Projects

D: Rank Early Action Projects

F: Evaluate Projects in Field

S: Work with Landowners/Cons-techs

M: Draft Watershed Plan w/ Early Action Projects *

Purpose: Show early on-the-ground results to partners and funders

Examples of Early Action Projects

Riparian reforestation…conservation easements…stream fencing…instream habitat restoration….land trusts….stream cleanups…fish barrier removal…septic system inspections…demonstration stormwater BMPs…watershed education…farm BMPs

Early action projects are low cost, easy to design, and can be installed in a year or less

Step 6: Adopt and Implement the Plan

D: Devise Implementation Strategy

F: Conduct Special Watershed Studies *

S: Create Watershed Partnerships

M: Adopt Final Plan

Purpose: Navigate the plan through local agencies, Elected officials and partners to make it happen

Step 7: Develop Long Term Capacity

D: Watershed Coordination and Funding

F: Indicator Monitoring

S: Ongoing Management Structure

M: Revisit and Update the Plan

Purpose: set yourself up to be a force for implementation in the long run

Watershed Coordination and Funding

- Maintain stakeholder interest
- Coordinate partners
- Education/outreach
- Project funding
- Track development
- Conservation Assistance
- Report Trends

The Collective Watershed Brain

Let's talk about ways to finance watershed restoration through local, state and federal sources.