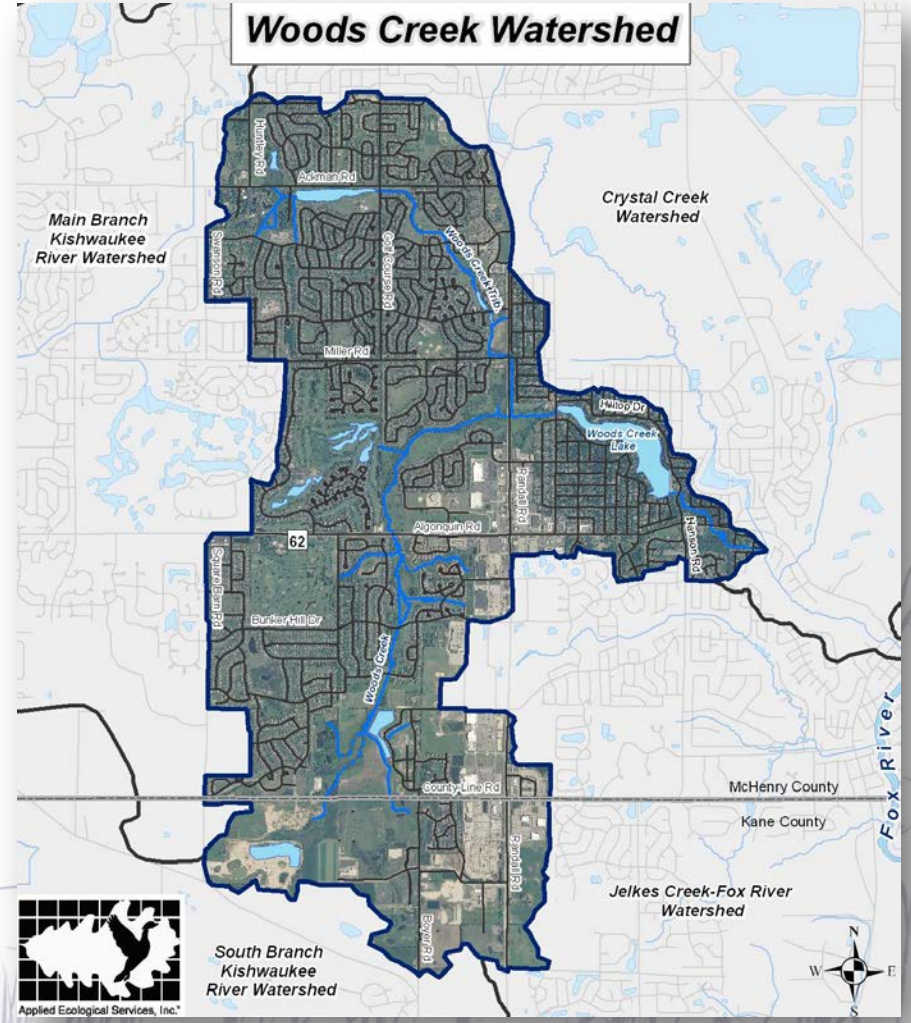
AES Approach to Watershed Planning

Prepared for: Woods Creek Watershed Stakeholders

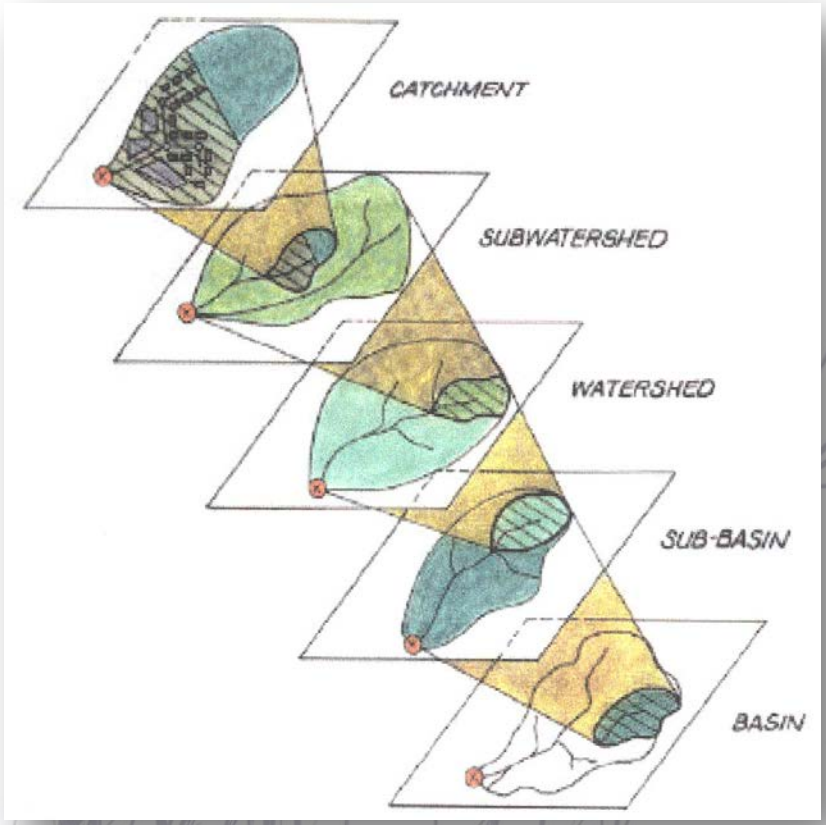


Watershed Planning Steps
(*Addresses USEPA 9 Elements)

1) Assess watershed characteristics, conditions, & problems.
2) Develop goals & measurable objectives.
3) Identify "Critical Areas" & pollutant loading hotspots.
4) Locate potential BMPs & calculate pollutant reduction
5) Identify, prioritize, and map remaining open space.
6) Develop a Prioritized Action Plan.
7) Develop a Watershed Information/Education Plan.
8) Develop an evaluation tool & implement watershed plan.

1) Watershed Assessment

- Topography/Watershed Boundary
- Natural Landscape Change
- Soils/Groundwater Recharge
- Future Demographics Changes
- Existing and Future Land Use
- Open Space/Natural Resources
- Streams, Lakes, Wetlands
- Water Quality



2) Develop Goals & Objectives

- Stakeholders will develop goals based on the watershed assessment & personal knowledge.

- Stakeholders will help develop measurable objectives for each goal that can be evaluated in the future.

3) Identify Critical Areas

- Severely eroded streambanks
- Poor stream buffers
- Important/unprotected open space
- Non-functional (water quality) detention basins
- Wetland restoration sites
- Future development sites

3) Estimate Pollutant Loading

- Delineate Subwatershed Management Units (SMU's)
- Select & run pollutant model for existing land use conditions

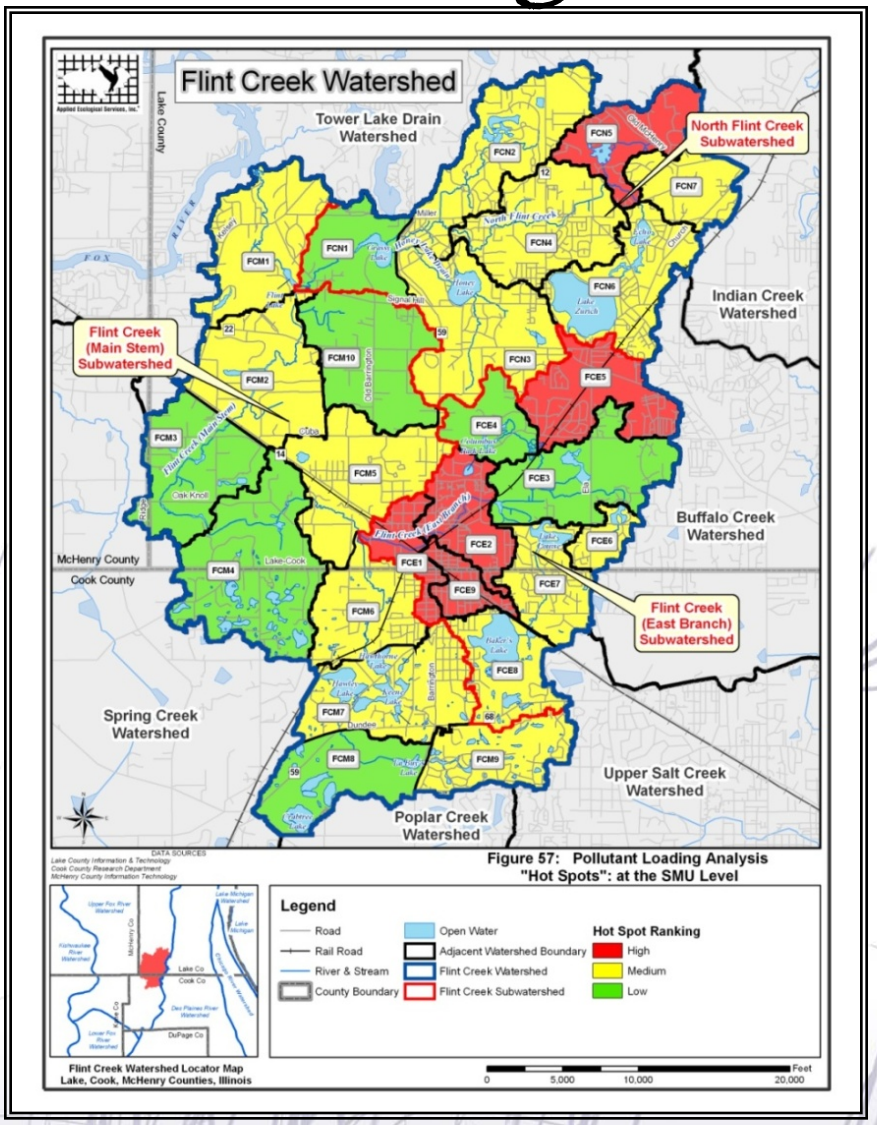


Figure 57: Pollutant Loading Analysis "Hot Spots": at the SMU Level

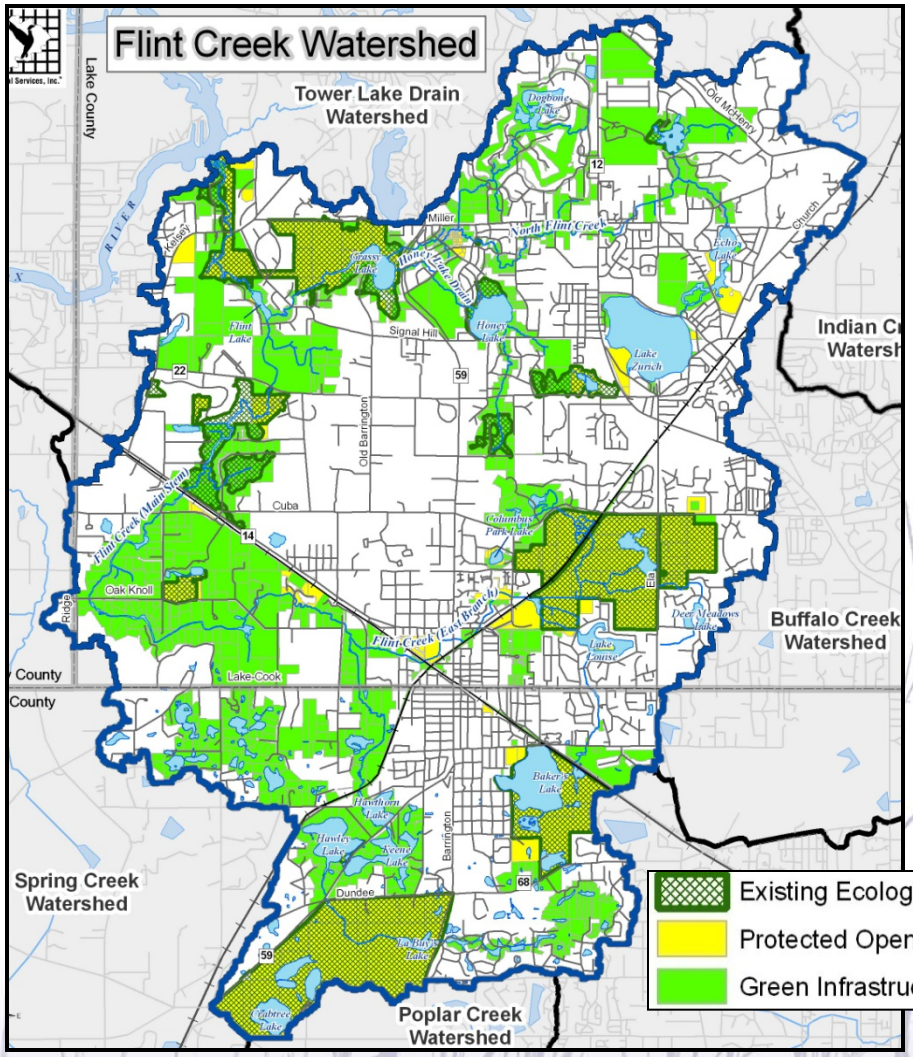
Flint Creek Watershed Locator Map
Lake, Cook, McHenry Counties, Illinois

4) Locate BMPs & Estimate Pollutant Removal

- Assess all stream reaches
- Assess all detention basins
- Look for potential wetland restoration sites
- Assess other areas per stakeholder recommendations
- Re-run pollutant model with BMPs

Rain Garden at Nockels Park in LITH

5) Open Space/Green Infrastructure



- Open space and natural resource data is used to map a parcel based "Green Infrastructure Network"

6) Prioritized Action Plan Identifying BMPs

- Stream Buffers
- Detention Basin Retrofits
- Rain Gardens/Bioswales
- Wetland Restoration
- Streambank and/or Lake Shoreline Restoration
- Greenway Protection and Enhancement

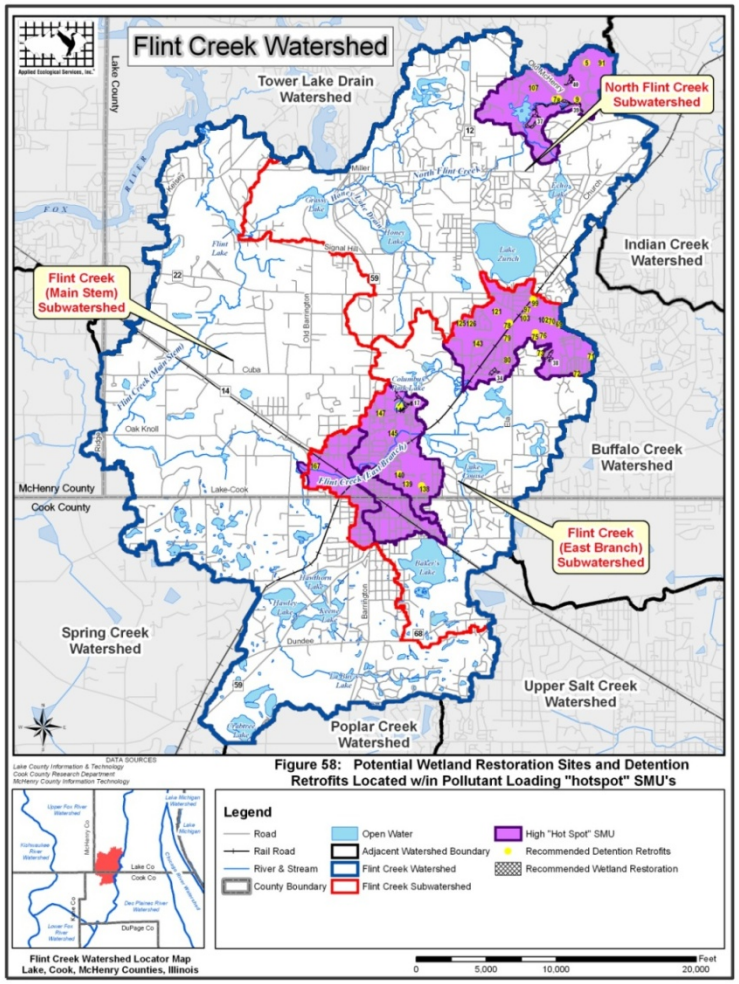
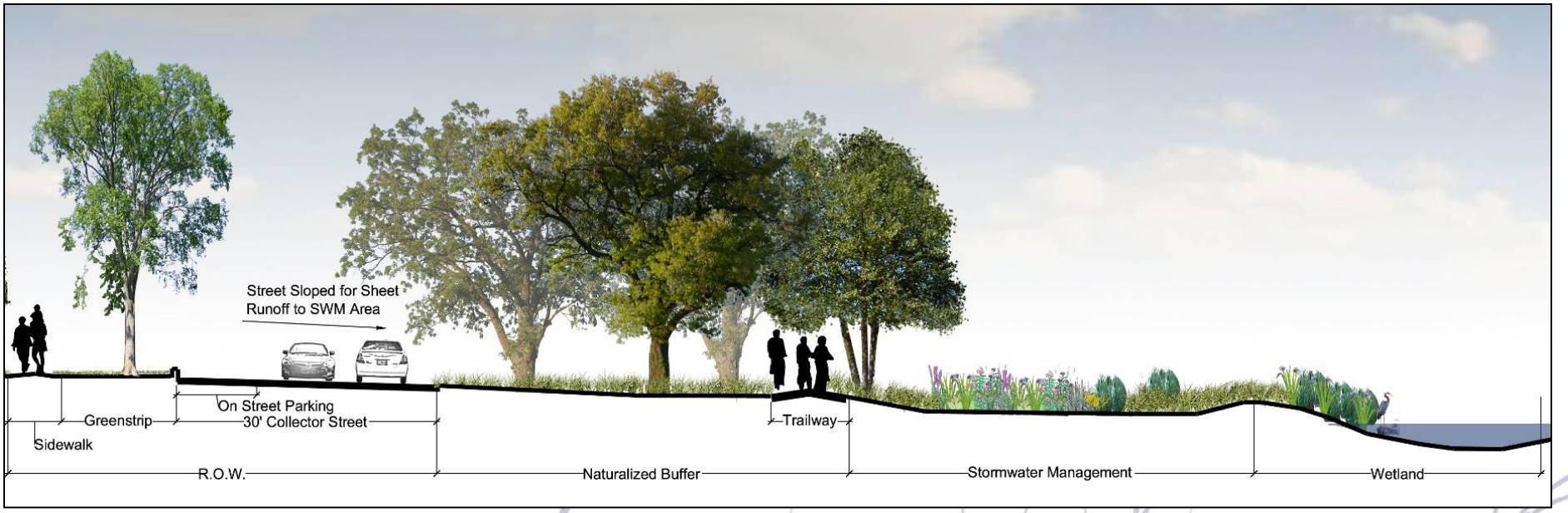


Figure 58: Potential Wetland Restoration Sites and Detention Retrofits Located w/in Pollutant Loading "hotspot" SMU's

Crystal Lake Park District

BMP ID#/ Location	Public/ Private	Protected?	Action Recommendation	Priority (H, M, L)	Lead Agency	Technical Assist.	Cost	Funding	Schedule
Stream Restoration Projects									
Woods Reach 10	Public	Protected	1) Extend buffer on both banks and plant with native vegetation; 2) construct artificial pools and riffles	High	Park District	IDNR; NRCS; USACE	$100-$300 lf	EPA 319	1-5 Years

The Urban Stormwater Treatment Train



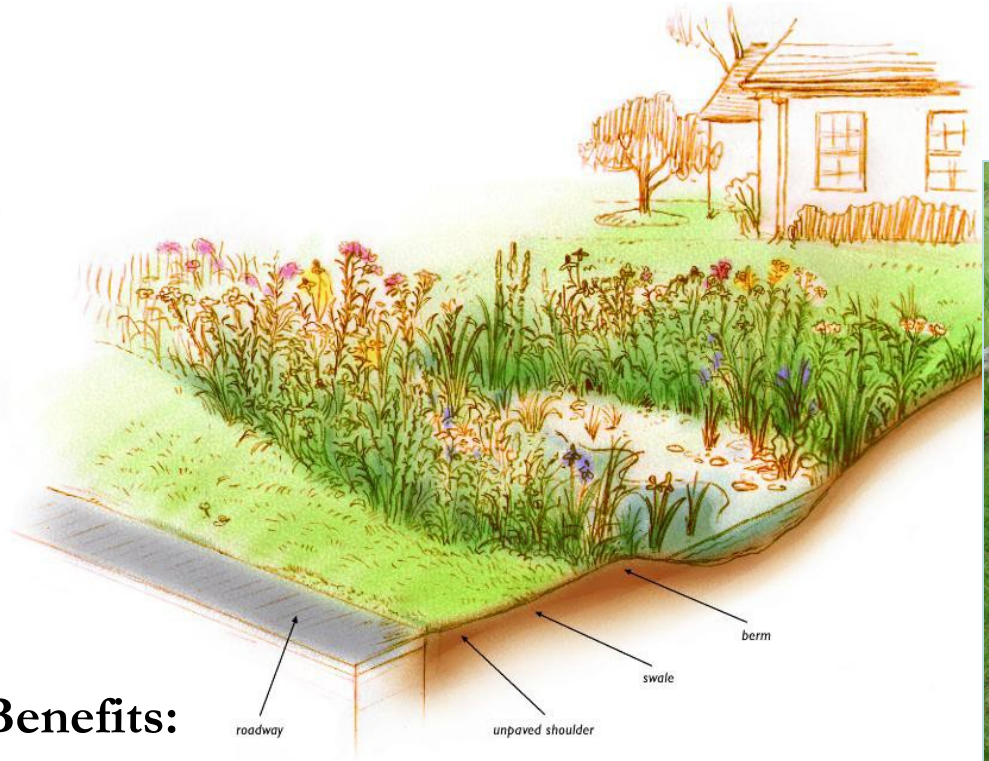
Precipitation

Rain Gardens & Bioswales

Buffers

Naturalized Detention Basin

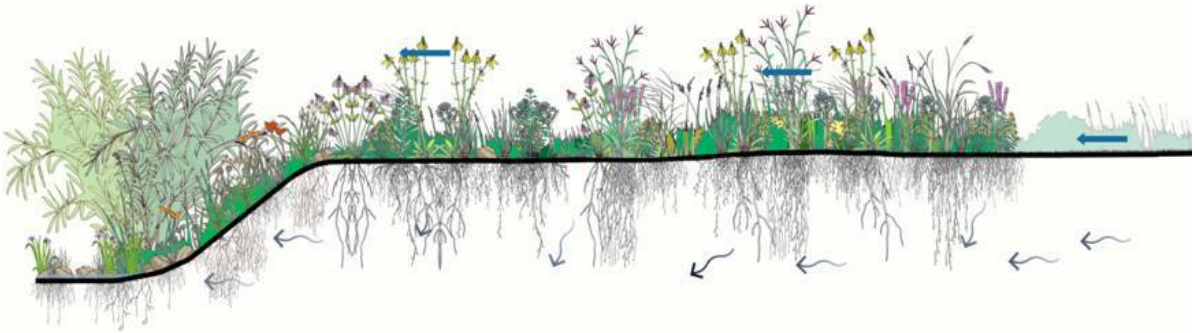
Rain Gardens



Benefits:

- First stage of filtering and flood protection
- Deep rooted native plantings enhance infiltration

Riparian & Upland Buffers



Benefits:

- Deep rooted grasses and forbs absorb and infiltrate water
- Wildlife habitat

Maintained Naturalized Detention Basins

Benefits:

- Provide breakdown of nutrients and pollutants in the water
- Control flooding
- Creates habitat

7) Watershed Information/Education Plan

- Purpose: change social behavior, public cooperation, and motivation to take action to meet plan goals

Education Action	Target Audience	Package (vehicle)	Lead and Supporting Organizations	Outcome/Behavior Change
Educate the general public about the importance of groundwater recharge and quality	General Public	Partnership hold an annual "event" day with workshops and field trips around the watershed	Partnership; SWCD	"Event" day attendees understand the importance of groundwater recharge and begin to change everyday activities.

8) Plan Evaluation

- Measurable "Indicators" and "Milestones" identified for each plan goal
- A "Report Card" created for each plan goal to help evaluate the plan implementation process

Questions and Answers