New Apps and Maps: Better Data Defines High Priority Areas

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The Challenge

To target litter before it enters the watershed, local governments and clean-up organizations need specialized apps to help diagnose issues and probable pathways in upland zones.

In 2015, USF CMS worked with Keep Pinellas Beautiful and the City of St. Petersburg to develop the Clean Community street watershed assessment and a new app using Kobo Toolbox, an open-source tool.

The Clean Community assessment integrates elements from:
- The Florida Department of Environmental Protection’s “walk the waterbody” manual;
- the Keep America Beautiful Litter Index;
- research on typical littered urban spots.

Process

The project was conducted in the Springs of 2015-2017. The team reviewed street and storm drain maps and watershed flows in upland areas to define probable pathways. Driving maps were created which included 11-20 contiguous ½ mile sites per watershed.

After training on the Litter Index and the app, municipal staff and volunteers were driven through the areas and stopped at each ½ mile site.
- Data was entered in phones and uploaded instantly and assessment were completed within 3 hours.

Results

The process and the app support easy data collection, and improve analysis of streets and storm drain conditions for specific locations and nearby structures.

The annual assessments provided a snapshot of street and community conditions in upland areas. The project:
- identified common residential behaviors, such as overfilling trash bins;
- defined problems associated with specific types of roads;
- discovered different neighborhood littering patterns.

The 2016 assessment of upland areas for Clam Bayou and Lake Maggiore found:
- littered right-of-ways were most commonly observed issue;
- 2nd most common issue varied: illegal dumping in Clam Bayou and obstructed storm drains in Lake Maggiore;
- 5 of 26 sites had an average Litter Index >2, which is considered “slightly littered.”

New Assessment & App Helps Cities Evaluate Upland Areas

Specialized apps integrating watersheds, upland areas and municipal objectives are necessary to implement upland reduction strategies. The app, process and reports can support coordination across departments, agencies and volunteer organizations.

Although Litter Index scores were generally good, relatively “clean” streets may be misleading. Because specific watersheds require frequent removal efforts, routine assessments and litter flow estimates would be useful.

Other recommendations include: extending use to staff and a simplified version for municipalities to use with residents. Use of the GPS function and photos will increase awareness of hot spots, support outreach and management efforts.

Other cities are starting to use similar tools: Philadelphia developed a GIS tool based on KAB metrics.

To obtain the Clean Community App contact: cjreynolds@usf.edu or hannah.torres@ucf.edu