DEVELOPMENT OF A USE ESTIMATION PROCESS AT A METROPOLITAN PARK DISTRICT

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Abstract: The need for a committed system to monitor and track visitation over time is increasingly recognized by agencies and organizations that must be responsive to staffing, budgeting, and relations with external stakeholders. This paper highlights a process that one metropolitan park agency uses to monitor visitation, discusses the role of validity and reliability in the establishment of a sustained counting system, and highlights some of the challenges and limitations inherent in estimating visitation with inductive loop counters.

A Committed System for Use Estimates

Many agencies concern themselves with the extent that their facilities are used. Since the early 1960's there has been a growing body of literature concerning use estimation methods for park and recreation agencies. Accurate and reliable visitation estimates can improve the success in decisions concerning new exhibits, facilities, and maintenance schedules. They also serve to communicate to funders and citizens the value that parks serve and the extent that they are used. Many grant sources now insist that use statistics be demonstrated as a prerequisite for major capital grants to be distributed.

Even though countless resources have been published and counting systems attempted, for many agencies, reliable sustained visitation counts remain elusive. For many, these counts are generated based upon best guesses or limited observations by counting only a few days of park use. However, there can be significant swings in visitation across a season, month, week, or even within a single day (Gregoire & Buhyoff, 1999; Hornback & Eagles, 1999). What need is a valid, yet "do-able" counting system that captures a majority of park visitation and tracks this use over a sustained period of time. In today's information-driven organizations, it will no longer be sufficient to conduct a major visitor initiative every 10 - 15 years in conjunction with master planning processes. Committed visitation functions internal to the agency or regular contracting which sets up a system for an individual agency (or region), will be needed to track use over time and report these statistics to stakeholders on a yearly, and sometimes monthly, basis.

The Evolution of Cleveland Metroparks Use Estimates

In 1993, Cleveland Metroparks sought to improve its visitation counting effort by creating a systematic process, which combines visual counts with mechanical counter data to generate use estimates for all of its fourteen parks (called reservations). Previously, the Park District had relied on extrapolations from survey data to estimate visitation (i.e., percentage of people who said they visited a park and how many times they said that they visited). This information was combined with limited mechanical counter data to also estimate commuters who drove through but did not stop. However, a new process was designed to count use from both commuters and recreationists more thoroughly. This effort was spearheaded by the incumbent Research & Program Evaluation Manager with the assistance of the Executive Director, other park directors and three part-time attendance counters.

The Use Estimation Process...

There are six basic steps used in generating Cleveland Metroparks' visitation estimates:

1. Determine park entrance and exit points and their characteristics of use.

2. Visually count entrances for the number of people per vehicle and the percentage who enter through each roadway entrance within a particular park.

3. Install inductive loop counters at strategic and representative park entrances.

4. Check and maintain mechanical counters on a monthly basis (i.e., take counts and reset the meter, adjust for sensitivity, change batteries, and ensure that the box is secure and/or undamaged).

5. Create use estimates by combining mechanical counter data with vehicle multipliers and entrance weights in Excel spreadsheets.

   (For example a park with one mechanical counter with a reading of 10,000 vehicles, an entrance weight of .25, and a vehicle multiplier of 1.5 people/vehicle would yield a visitation estimate of 60,000 people for that park).

6. Tabulate these estimates by park, by month, and across several years.

Cleveland Metroparks uses this counting procedure to estimate the following types of use:

- Visitor Occasions - people who enter the park district for any reason (i.e., includes commuters, other non-recreational use)
- Recreational Visits - People who enter the Park District and visit parking lot and recreation areas

Recreational Visits is a sub-set of Visitor Occasions although it is possible that some parking lots can get used as a turn-around for parkway commuters.

Given that walk-on traffic may represent a considerable sub-group (and that they cannot be counted with inductive loop counters), an upward adjustment of 3% - 5% is currently added to this Recreational Visit statistic. However, this arbitrary adjustment is rather subjective thus, Cleveland Metroparks is now making efforts to conduct surveys within a sample of parks to determine the percentage of visitors who access the park by walking, bicycling, etc.

Visitation Data for Cleveland Metroparks is presented in Table 1. The reader is cautioned that while there appears to be slight increases in visitation each year (especially in the first four years), most of this increase is likely due to changes (improvements) in counting methodology at specific parks within the Cleveland Metroparks system. It took approximately four years to generate visual estimates and to install counters at all of the fourteen reservations within the Cleveland Metroparks' system. Agencies who have multiple parks under their jurisdiction, should also expect a similar start-up period unless they: 1) only have a few parks with easily defined entrances, or 2) have extensive staffing to conduct visual counts throughout the year. At Cleveland Metroparks, visual re-counts were also required at some of the parks due to dramatic changes in traffic patterns and facility construction. When these improved use estimates were integrated into this fledgling system, there were instances where some parks would have their estimates increased by 50% just because a new entrance weight and vehicle multiplier was used.

After five years of counting with the same multipliers and entrance weights, visitation showed much slower growth or, in some years, decline. The lesson here is to take time and effort to generate valid visual estimates and provide counting coverage at the on-set of a counting initiative. The first years of a counting effort should focus on the validity of the estimates without trying to place too much emphasis on changes over time. It is likely that changes in visitation will be due to refinements made in the counting methodology, rather than any real increase/decrease in visitation. However, once the methodology is established and used consistently, subsequent estimates are more likely to be useful in tracking visitation trends over time.

Unfortunately, there are instances where changes in the character of park use will mandate that re-counts be taken. Therefore, the question of invalid estimates is never fully resolved, but only minimized. The hope is that, once a counting system is established, wholesale changes in the methodology will not be needed and slight adjustments will be all that is required. Slight changes made after the counting system is established will have a smaller impact than changes made during the early years, when some estimates are based on guessing until they can be counted and integrated into the system.

Table 1. Cleveland Metroparks Attendance (1993 –1999)

Year	Visitor Occasions	Recreational Visits
1993	34,238,948	9,792,339
1994	34,793,894	9,950,228
1995	40,068,920	11,977,726
1996	49,778,861	13,749,994
1997	50,391,541	14,005,832
1998	48,516,922	15,753,691
1999	51,948,608	15,907,714

Advantages/Pitfalls of Using Inductive Loop Counters

Using inductive loop counters offer many advantages for park districts whose visitors enter through multiple vehicular entrances. They are economical in terms of unit cost ($280 to $400, depending on the features available). Their solid state design makes them more resistant to vandalism and varying climates than other counters. However, inductive loop counters are not without their pitfalls. They require personnel resources to install, continually monitor, and adjust for sensitivity. Moreover, unless census counts are taken at each park entrance, they require personnel to make visual counts (for vehicle multiplier estimates and for entrance weights). Another limitation is that these counters cannot capture walk-on traffic into a park. For parks that receive substantial walk-on visitation (i.e., 40% or more), some other counting methodology should be considered.

Future visitation counts at Cleveland Metroparks will refine this existing methodology by conducting visual re-counts and by conducting surveys to estimate the percentage of walk-on traffic that is currently estimated from a "best guess." Recreation use within specific park areas (i.e., pavilions, swimming areas) will also be conducted to help managers understand use at a more site-specific level. Creating both an accurate and a reliable visitor attendance tracking method takes resources, time, and commitment on the part of an agencies' leadership and constituency. The fruits of such an effort will yield useful and accessible information, for multiple purposes. More detailed information on Cleveland Metroparks' park visitation methodology and the *1999 Park District Visitation Report* may be obtained from the Research & Program Evaluation Division, Phone: (216) 635-3277.

Literature Cited

Gregoire, T. G. & Buhyoff, G. J. (1999). Sampling and estimating recreational use. PNW-GTR-456. Portland, OR: USDA Forest Service, Pacific Northwest Research Station, 39 p.

Hornback, K. E., & Eagles, P. J. (1999). Guidelines for public use measurement and reporting at parks and protected area. IUCN, Gland, Switzerland and Cambridge, UK. iv + 90 p.