Performance Measures for Active Transportation Projects

Min Zhou, PE
Why Performance Measures for APT?

- Funding requirement for the effectiveness of ATP
- Evaluate and improve the impact of design treatments
- Evaluate public inquiry, satisfactory and increasing users
What Are the Best Practices & Methodologies

INTERIM COUNT METHODOLOGY GUIDANCE FOR ACTIVE TRANSPORTATION PROGRAM (ATP)
Sep. 2019

- Volumes
- Speed
- Collision
- Screenline for Behaviors (SCAG method)
- Survey and Questionnaires
Examples of Performance Measure Study in Long Beach

- 3rd and Broadway Cycle Track
- Roundabouts and Traffic Circles
- 10-miles Daisy Bike Blvd Before & After Study
3rd and Broadway Cycle Track in Long Beach

Before Cycle Track

After Cycle Track
More Bikes and Peds, Fewer Cars

- 33% Increase in Bicyclists
- 13% Increase in Pedestrians
- 12% Decrease in Vehicles

![Graph showing the comparison of total bicycle, pedestrian, and traffic volumes before and after implementation. The graph indicates a significant increase in bicycle and pedestrian traffic with a decrease in vehicle traffic.]
Traffic Calmed

- 85th Percentile Traffic Speeds Down
- 3rd St. Speed Dropped from 36 MPH to 27 MPH
- Broadway Speed Dropped from 30 MPH to 26 MPH
Reduced Accidents

3 Bike-Related Accidents in 1 Year After Implementation

Vehicle Accident Rate Down 23%
Bicycle-Riding on the Sidewalk

Before Implementation: 62 - 69% of Bicycles ride on the Sidewalk

After Implementation:
30 - 39% Ride on the Sidewalk
Bicycles use Sidewalk to go opposite direction of flow
CITY OF LONG BEACH 3RD AND BROADWAY STREETScape PROJECT - RETHINKING HOW A CITY MOVES AND FEELS
Takeaway:

Performance measures are used to evaluate and improve the impact of design treatments.
Roundabouts & Traffic Circles Evaluation
The Roundabout at Park and Vista slows traffic from an average of over 25 mph to 14 mph at the crosswalk to 10 mph at mid intersection.
The Traffic Circle at Termino and 6th slows traffic from just under 25 mph one block away (Termino and 5th) to 10 mph at the Circle.

Termino & 6th
Intersection with Traffic Circle
85th percentile
10 MPH

Termino & 5th
Intersection with no controls
85th percentile
24 MPH
6th Street

6th and Los Altos

Avg 24 mph
85% 28 mph

6th and Ultimo

Avg 13 mph
85% 16 mph

Intersection traffic speeds on 6th Street are 50% slower at intersections with traffic circles.

6th & Los Altos
23.9 mph avg
24.0 Median
32 Max
21 Min

6th & Ultimo
12.8 mph avg
12 Median
23 Max
8 Min
Takeaway:

Performance measures are used for public outreach, satisfactory, and increasing users.
10-Mile Daisy Bike Blvd in Long Beach

More systemic before and after study and data collection
Before & After for Segment ADT Comparison
Before & After for Intersection Counts
Bike and Pedestrian Screenline Analysis

Bicycle/Pedestrian Data Collection - Screenline Count Form

Bicycles
- Count bicyclists when they cross this imaginary line.
- Make additional marks to count other characteristics.
- Bikes - Right to Left: 12
- Bikes - Left to Right: 12

Pedestrians
- Count pedestrians when they cross this imaginary line.
- Make additional marks to count other characteristics.
- Pedestrians - Right to Left: 55
- Pedestrians - Left to Right: 53
Roundabouts
Myrtle & Harding Rd

Before & After

Qualitative Benefit:
1. Shorter and Safer crosswalk
2. No need to stop for bicyclists
3. Slow driving through instead of stop
Before and After for Traffic Circle Locations
Median Refuge for Bike
Lesson learned

- *Before conditions should be collected no earlier than six months prior to the start of construction*
- *After conditions dataset should be collected at least one to two years post construction*
Best Practices for ATP Performance Measures

- Follow Count Methodology Guidance
- Do It at the Right Time
- Utilize Questionnaires and Surveys (online)
- Continue Monitoring Program
- Permanent Count Stations
Takeaway:
Performance measures are used to evaluate effectiveness of ATP funding requirement