Beyond the Details: Considering the Benefits of Active Transportation
Why Measure The Benefits?
Why Measure The Benefits?
"2/3 of merchants said new bike lanes had a positive overall impact on their business."
How Do You Get Info?
Active Transportation Program
2019 SYMPOSIUM
Inform. Educate. Inspire.
Active Transportation Program

2019 SYMPOSIUM
Inform. Educate. Inspire.

Dillon Fitch
Co-Director Bicycling Plus Research Collaborative
UC Davis Institute of Transportation Studies
Equity

Active Transportation Symposium 2019
Health Co-Benefits of Active Travel in Reducing California’s Transportation Carbon Emissions

Neil Maizlish, PhD, MPH
Visiting Researcher
University of California, Davis

https://cal-ithim.org/ithim
The Integrated Transport and Health Impact Model (ITHIM)

https://cal-ithim.org/ithim

Physical Activity

Travel Survey

Health Survey

Vehicle Emissions Model

Air Shed Model

U.S. Census

Traffic Demand Model

Traffic Collisions

Health Statistics

Scenario vs. BAU

Scenarios

ITHIM

Health Outcomes

1. Premature Deaths
2. Disability Adjusted Life Years
   ✓ Years Living with Disability
   ✓ Years of Life Lost
3. Costs

Active Transportation Symposium 2019
Health Co-Benefits of Physical Activity by Substituting Walking and Cycling for Short Car Trips

Preventable Chronic Disease Deaths and California’s Transportation Plans/Goals

Annual Preventable Deaths

- Lack of PA: 23,000
- US Surgeon General: 8,616
- CARB Scoping Plan: 6,019
- Caltrans Strategic Management Plan: 2,414
- SB375 Sustainable Communities Strategy: 880

Active Transportation Scenarios
Annual Change in Car Carbon Emissions in California’s Transportation Plans and Goals

2017 GHG in Transportation = ~170 MMT
Pro/Cons of Tools

• ITHIM Use cases
  ▪ Policy Education (PA, Air pollution, Traffic Safety)
  ▪ Health Impacts of transportation plans/MPOs
  ▪ State agency goals for greenhouse gas reduction
  ▪ Equity Analysis

• ITHIM limitations: not sensitive to small geographic scale
  ▪ Depends on other models to predict changes in travel patterns due to policy, systems, or environmental changes

• HEAT (Health Economic Assessment Tool): https://www.heatwalkingcycling.org/#homepage
  ▪ Good for project level analyses:
  ▪ If x people regularly walk or cycle an amount of y, what is the economic value of the health benefits that occur as a result of the reduction in mortality due to their physical activity?
Conclusions from ITHIM Publications

- California State agency plans and goals fall along a wide range of health benefits from active travel physical activity.
- Monetized annual value range: $1 billion to $67 billion
- SCS plans are the most modest on a spectrum of ambition
- While net health benefit is positive, pedestrian and bicyclist injuries increase in many plans – safety alert!
- Physical activity benefits far exceed those from air pollution reduction
- Plans/goals that emphasize cycling achieve both high health benefits and carbon reductions
Active Transportation Program
2019 SYMPOSIUM
Inform. Educate. Inspire.

Julia Griswold
Researcher
UC Berkeley SafeTREC
Counting on a Limited Budget
What We Can Learn from Long Term Count Data
Average automated ped counts

Average Count

9am 5pm
When to count

Lower is better!
## Interim Count Methodology Guidance

<table>
<thead>
<tr>
<th>ATP Project Types</th>
<th>Recommended Count Type &amp; Method</th>
<th>Duration</th>
<th>Alternative Count Type &amp; Method</th>
<th>Duration</th>
</tr>
</thead>
<tbody>
<tr>
<td>Infrastructure</td>
<td>Automated 24 Hour</td>
<td>One Week</td>
<td>Manual In-field Counts</td>
<td>4-total Hours on 3 Weekdays</td>
</tr>
<tr>
<td>(Including SRTS Infrastructure projects)</td>
<td>Manual Count from Video 24 Hour</td>
<td></td>
<td>Peak Period</td>
<td>(T, W, TH) at 7 – 9 AM and 4 – 6 PM and 1 Weekend day 11 AM - 1 PM*</td>
</tr>
</tbody>
</table>
## How long to count

<table>
<thead>
<tr>
<th>Days</th>
<th>AM Peak</th>
<th>Midday</th>
<th>PM Peak</th>
<th>12 hrs</th>
<th>24 hrs</th>
<th>Coeff. of Var.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Tue, Wed, OR Thu</td>
<td>x</td>
<td>x</td>
<td></td>
<td></td>
<td></td>
<td>0.49</td>
</tr>
<tr>
<td></td>
<td></td>
<td>x</td>
<td></td>
<td></td>
<td></td>
<td>0.20</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>x</td>
<td></td>
<td></td>
<td>0.20</td>
</tr>
<tr>
<td></td>
<td>x</td>
<td>x</td>
<td></td>
<td></td>
<td></td>
<td>0.17</td>
</tr>
<tr>
<td></td>
<td>x</td>
<td>x</td>
<td>x</td>
<td></td>
<td></td>
<td>0.19</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>x</td>
<td>0.13</td>
</tr>
<tr>
<td>Tue, Wed, AND Thu Thu</td>
<td>x</td>
<td>x</td>
<td>x</td>
<td></td>
<td></td>
<td>0.17</td>
</tr>
<tr>
<td>Sat</td>
<td></td>
<td>x</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Mon - Sun</td>
<td></td>
<td></td>
<td></td>
<td>x</td>
<td></td>
<td>0.09</td>
</tr>
</tbody>
</table>

Options in Interim Guidance

7-9am  11am-1pm  4-6pm  6am-6pm
Expanding Counts

Manual Count from a Wednesday at 3pm

\[
\frac{25}{0.012} = 2,083
\]

Hour-to-Week Expansion Factors
Research Benefits of Counts

Dependent variable for ped/bike exposure models

Estimate volumes at locations without counts

Before-and-after safety studies of new types of facilities

Quantify safety benefits of infrastructure investments
Takeaways

When?
  • At highest count times
  • Context is important

How Long?
  • More is better

What else?
  • Consistency
  • Documentation
  • Expansion methods
Active Transportation Program

2019 SYMPOSIUM
Inform. Educate. Inspire.

Jeanne LePage
Fund Development Manager, Ecology Action
# My School(s)

The following is a list of all the schools to which you have access. There are a total of 33 schools on this list.

## Add New School

<table>
<thead>
<tr>
<th>School Name</th>
<th>School Group</th>
<th>City</th>
<th>Last Updated</th>
<th>Access Level</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ann Soldo Elementary School</td>
<td>SRTS - Santa Cruz</td>
<td>Watsonville</td>
<td>06/16/15</td>
<td>Edit Data</td>
</tr>
<tr>
<td>Bay View Elementary School</td>
<td>SRTS - Santa Cruz</td>
<td>Santa Cruz</td>
<td>07/31/18</td>
<td>Edit Data</td>
</tr>
<tr>
<td>Branciforte Middle School</td>
<td>SRTS - Santa Cruz</td>
<td>Santa Cruz</td>
<td>11/25/13</td>
<td>Edit Data</td>
</tr>
<tr>
<td>Branciforte Small Schools Campus</td>
<td>SRTS - Santa Cruz</td>
<td>Santa Cruz</td>
<td>11/14/13</td>
<td>Edit Data</td>
</tr>
</tbody>
</table>

---

## Refine Your View

- **Search**
  - School
  - School Group
  - School District
  - State
  - City
  - Zip Code

- **Access Level**
  - Run Reports
  - Edit Data

- **School Tags**
  - sc city school - after 2 year
Parent Survey

Student Mode Survey

Sample Report
Evaluation

Identifying issues, improving activities and understanding results

Around the country, communities are conducting Safe Routes to School (SRTS) programs in order to enable and encourage children to walk and bicycle safely to school. Communities tailor a combination of engineering, education, encouragement and enforcement strategies to address the specific needs of their schools. Evaluation is an important component of any SRTS program. Evaluation is used to determine if the aims of the strategies are being met and to assure that resources are directed toward efforts that show the greatest likelihood of success. Also, evaluation can identify needed adjustments to the program while it is underway. This information describes how to conduct a SRTS program evaluation that is tailored to that program’s objectives and strategies.
PARENT SURVEY RETURN RATES
SANTA CRUZ COUNTY

Elementary Schools: 43%
K-8 Schools: 23%
Middle Schools: 28%
High Schools: 17%
Student Travel Mode Implementation Recommendations

• Having teaching staff conduct surveys is time/cost effective
• Collecting 2 days of data on one day saves time and makes the task less onerous for teachers
• Ensure weather in two data collection points is similar
• Consider selecting a sampling of the classrooms (one or two grades perhaps)
• Remember mode surveys are children’s self-reported behavior and can be influenced by classroom peers
• Sometimes parent survey and student mode survey results differ, we defer to parent surveys in that case
### Bike Smart - Youth Bicycle Safety Education Program

**Rodeo Evaluation**

Your feedback is very important to us to ensure our program continues to meet the needs of our participants and their teachers. Thank you for completely filling out this form and returning it to program staff.

- **Teacher Name:** Ms. Steele
- **School:** Oak Avenue
- **Email:** a.steele@graysfield.k12.ca.us
- **Grade:** 5th
- **Rodeo Date:** 5/31/19
- **# of Students:** 25

1. Based on student responses & your observation, please rate the following:

<table>
<thead>
<tr>
<th>Agree</th>
<th>Disagree</th>
</tr>
</thead>
<tbody>
<tr>
<td>5</td>
<td>4</td>
</tr>
<tr>
<td>3</td>
<td>2</td>
</tr>
<tr>
<td>2</td>
<td>1</td>
</tr>
</tbody>
</table>

2. Will the Bike Smart training increase safe bicycling behaviors for your students?

- **Yes**
- **No**

Comments: Absolutely! It’s always important to be aware of how to be safe, especially on a bike.

3. What impact did the Bike Smart Program have on the youth and school?

I think it was a positive impact and they learned bike safety skills.

---

### Walk Smart - Youth Pedestrian Safety Education Program

**Walk Around the Block or School Site Training**

**Teacher Evaluation**

Your feedback is very important to us to ensure our program continues to meet the needs of our participants and their teachers. Thank you for completely filling out this form and returning it to program staff.

- **Teacher Name:** Ms. Macentini
- **School:** La Grange
- **Email:** b.macentini@graysfield.k12.ca.us
- **Grade:** 2
- **Field Trip Date:** 5/31/19
- **# of Students:** 22

1. Based on student responses & your observation, please rate the following:

<table>
<thead>
<tr>
<th>Agree</th>
<th>Disagree</th>
</tr>
</thead>
<tbody>
<tr>
<td>5</td>
<td>4</td>
</tr>
<tr>
<td>3</td>
<td>2</td>
</tr>
<tr>
<td>1</td>
<td>1</td>
</tr>
</tbody>
</table>

2. Will the Walk Smart training increase safe walking behaviors for your students?

- **Yes**
- **No**

Comments: Many youth have never had instruction in this important safety area. Thank you.

3. In what ways do you think the Walk Smart program will make an impact on student, family, and school transportation behavior?

Hopefully, these students will be role models for friends & family. With continuous (year to year) instruction, more communities will face more traffic and

---

**Active Transportation Symposium 2019**
Questions?

Jeanne LePage
Fund Development Manager
Ecology Action
jlepage@ecoact.org
831-515-1344
Active Transportation Program
2019 SYMPOSIUM
Inform. Educate. Inspire.

Chris Kluth
SANDAG – Active Transportation Program Manager
Challenges in Implementation

- Expectations
- Time
- Historical bias
  - Cultural
  - Data
- Modeling

Active Transportation Symposium 2019
Getting to Performance

- Commitment (Time)
- Funding
- Measuring change in:
  - Ridership
  - Mode split
  - Behavior
- Network
LONG-DURATION DATA COLLECTION

SANDAG Eco-Counters Work Plan:

- Repaired counters
- Validated counters
- Developed Adjustment Factors
- Remove / Replace Outlier Data
- Apply Adjustment Factors
- Estimate Annual Average Daily Bicycle (AADB) Volumes
- Monitor counts closely and conduct field visits as-needed

Ctrl + click map to view locations!
LONG-DURATION DATA COLLECTION ON BAYSHORE BIKEWAY SEGMENTS 4B AND 5

Pre-Project, Post-4b, Post-5 | 2008 | 2015 | 2018
--- | --- | --- | ---
Thursday Bike Volumes | 135 | 333 | 351
Sunday Bike Volumes | 246 | 600 | 661
Contact Information

Chris Kluth
SANDAG
Chris.Kluth@sandag.org
(619) 699-1952