Transit Management Using Performance Measures

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Session Overview

• What’s in it for us?
• Performance measure data
• Efficiency vs. Effectiveness
• Developing a program
• PMs and your Governance Board
How many feet in a yard?

Depends on how many people in the yard.

Mike Flanagan
Performance Measurement

• What is it?
  – Process of quantifying the goals and objectives of a transit system
  – A way to
    • manage
    • evaluate
    • communicate
Why Measure Performance?

- Federal reporting (NTD)
- ADA compliance documentation
- Grant applications
- External Reporting
- Municipal budgeting and reporting
- Insurance and liability
- **AGENCY NEEDS!**
Why Measure Performance?

• Benefits
  – Service Monitoring (Poor, minimal, good, excellent)
  – Internal Communications
  – Self-Improvement
  – Decision-Making
Why Measure Performance?

• Benefits
  – Mandated Reporting
  – Assess past, present & future performance
  – Provide trend analysis
  – Indicate problem areas
  – Planning for the future
Why Measure Performance?

“For the purpose of transit service planning, tracking performance at the individual route level enables transit planners to make good decisions.”

Best Practices in Transit Service Planning, USF-CUTR
Performance Measures

- Use system mission, goals and objectives to define performance measures

  - Service expansion?
  - Service contraction?
  - Service consolidation?
Performance Measures

- Challenges (or why some people don’t like to use performance measures...)
  - May not like the results
  - Data collection may be costly
  - Risk that someone may use the results against you
Performance Measures

- Data must be collected
  - Accurately
  - Timely
  - Consistent
Performance Measures

• Collecting data
  – Ride checks (oldest, most widely used)
  – ITS (i.e.: APC, fare collection, etc.)
  – Driver’s logs
  – Passenger surveys (demographics, trip purpose, likes/dislikes)
  – Agency data (scheduling, maps, logs, reports, financials, farebox, etc.)
Performance Measures

Variables to consider...

• Route frequency
  – High?
  – Low?

• Day of the week?
  Weekends?

• Peak or off-peak periods?
Performance Measures

Type of service…

• Fixed Route
• Demand Response
• Deviated Fixed
• U-Pass
• Circulators
Examples of PM Standards

• Chicago Transit Authority
  – Passenger trips per hour: 30 when service interval is 30 minutes

• Milwaukee County
  – Minimum ridership 22 passengers per hour for weekday service

• Mass. Bay Transportation Authority
  – Passengers per mile:
    • 2.5 during peak periods
    • 1.5 during off-peak periods
Examples of PM Standards

• York Region Transit
  – Passengers per hour: ave. - 25, min. – 8

• RTD – Denver
  – Passengers per hour
    • 15 minute headways: 25-39
    • 10 minute headways: 40+

• FTA recommendations…
  – Passengers per mile:
    • 2.5 for high frequency lines
    • 1.2 for low frequency lines
Performance Measures

• Transit managers should frequently discuss PM’s with their board
  – Tolerances, trade-offs
  – Setting fares, contracts, etc.
  – Policy decisions

• Peer system’s PM results
  – Tendency to compare
  – Every system is unique
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<th>Ridership</th>
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<th>Trips/Hour</th>
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Efficiency PM’s

• The relationship of inputs to outputs
• “Doing things right”
• Examples
  – Cost/hour
  – Miles/vehicle
  – Farebox recovery
Effectiveness PM’s

- The relationship of inputs to objectives
- “Doing the right things”
- Examples
  - Passengers/hour
  - On-time performance
  - Complaints/
    1000 passengers
  - Missed transfers
Performance Measures

Efficiency
Doing things right

Effectiveness
Doing the right things

Balance
Developing/Improving a Program

• Develop a measurement program
  1. Define goals & objectives
  2. Generate management support
  3. Identify key personnel and stakeholders
  4. Select performance measures
Developing/Improving a Program

• Develop a measurement program
  5. Test and implement program
  6. Monitor and report performance
  7. Integrate into decision making
  8. Review and update annually
Goals and Objectives

• Goals
  – Improves communication
  – Reduces micromanagement
  – Encourages employee innovation
  – Communicates the right message to the public
Goals and Objectives

• Objectives
  – Steps towards achieving a goal
  – Typically 2-3 objectives for each goal
  – Should be aligned with performance measures
    • Measurable
    • Specific
Goals and Objectives

- Well written goals are **S M A R T**
  - **S**pecific - easy to understand, no interpretation needed
  - **M**easurable - easy to determine if accomplished
  - **A**ttainable - a challenge, but within reason
  - **R**elevant - linked to the agency’s mission
  - **T**ime limited - must have a timetable
Examples of Service Goals

• At least 90% of all stops should be on time (0 min. early to 5 min. late)

• Rural area demand response service should maintain an average speed of at least 25 miles per hour and intra-urban area demand response service an average of 15 miles per hour

UWM Transit Planning Study
Examples of Service Goals

• The system’s vehicle hours per year should not be increased by more than 10% over the amount for the previous year.

• All fixed route services should maintain a minimum of 1.0 passenger per vehicle mile.

• There should be a minimum of 8,000 miles between road calls per vehicle.

UWM Transit Planning Study
Broward Co., FL - 5-Year Plan

Goal #4: “Develop cost effective transit alternatives”

Monitor 25 Performance Measures/Indicators

- Operating Expense per Capita
- Operating Expenses per Passenger Trip
- Operating Expense per Revenue Mile
- Operating Expenses per revenue Hour
- Passenger Trips per Capita
- Passenger Trips per Revenue Mile
- Passenger Trips per Revenue Hour
- Farebox Recovery

UWM Transit Planning Study
Broward Co., FL - 5-Year Plan

Goal #4: “Develop cost effective transit alternatives”
Monitor 25 Performance Measures/Indicators

- Service Area Population
- Passenger Trips
- Operating Expense
- Revenue Miles
- Route Miles
- Total Employees

- Revenue Hours per Employee
- Passenger Trips per Employee
- Maintenance Expense
- Vehicle Local Revenue

UWM Transit Planning Study
Broward Co., FL - 5-Year Plan

Goal #4: “Develop cost effective transit alternatives”
Monitor 25 Performance Measures/Indicators

• Local Contribution
• Directly-Generated Non-Fare Revenue
• Passenger Revenue
• Average Age of Fleet
• Vehicle Available in Max. Service Local Contribution
• Vehicle Operated in Max. Service Directly-Generated Non-Fare Revenue
• Revenue Miles per Vehicle in Max. Service Passenger Revenue

UWM Transit Planning Study
Stakeholders

- Before you develop your list of performance measures, remember there are different measures, depending on who is looking at them:
  - Staff?
  - FTA/NTD?
  - Riders?
  - Governing board?
External Stakeholders

Regional planning agencies
Transit agencies
Developers
Organizations
Law enforcement
Emergency responders
Local government
Council of Governments
Human service agencies
Toll authorities
Businesses
Federal agencies
Tribal Leaders
Educational institutions

AGENCY
Transit Boards

• Primary Responsibilities of a Board of Directors:
  – Safety
  – Legal concerns
  – Stewardship
  – Public advocacy
Just a little tip...

Spend some time orientating your board members on the use of performance measures and indicators!
Monitor and Report Performance

- Missed Runs
- System % Missed Runs
- Complaints
- Complaints/1000 pass
- Complaint Types
- Missed Transfers
- System % Missed Transfers
- Telephone Calls
- Ave. Calls per Day

- Social media
  - Likes
  - Friends
  - Followers
  - Video views
  - Email subscribers

- Total Passengers
- Vehicle Miles
- Revenue Hours
- Accidents/100K Miles
Monitor and Report Performance

- Routes
- Jurisdictions
- Special programs (i.e.: college UPASS)
- Days of the week
- Hours of the day
Final Thoughts

• A solid performance measurement program will improve your system’s service quality and efficiency
• Communicating specific performance information will improve community and funding agency relations
Final Thoughts

• Effective and efficient performance measure reporting will improve your communications with policy boards
• Designing and implementing a performance tracking system will take some time and resources, but start small and then expand later
Resource

- Transportation Research Board
- Transit Cooperative Research Program

TCRP Report 88
A Guidebook for Developing a Transit Performance-Measurement System

onlinepubs.trb.org
Resource

surtc.org/transitfactbook