PRESENTERS

- Mary Sue O’Melia, President – TransTrack Systems, Inc.  
  *Business Intelligence for the Transit Industry*

- Paula Faust, Deputy Director of Transportation – Gardena Bus Lines  
  *Case Study for Creating A Statistical Information System*

- Gloria Salazar, Assistant General Manager & Chief Financial Officer – San Joaquin Regional Transit District  
  *National Trends and Peer Reviews*
DATA OVERLOAD

- Transit agencies are overwhelmed with data from many sources
- Basis for performance data is inaccessible or fragmented
- Credibility and reliability is often impacted by data inconsistencies
- Collecting and maintaining data is expensive and time-consuming
Executive Reporting System – Accurate and timely information for strategic decision-making
Decision Support System – Consolidate information for tactical decisions to improve performance
BI – HOW TO GET THERE

- **Key Indicators & Data** – Decide on what to collect and how often to report; establish a baseline

- **Best Practices** – Document sources and on-going processes; provide data definitions; set targets

- **Single Source of Data/Distributed Access** – Get data at the source; eliminate time-consuming data reconciliations

- **Management Commitment** – Use it and stay vigilant
**KEY INDICATORS & DATA**

- **Decide on what to collect and how often to report**
  - Who will be using data and for what purpose?
  - How important is data to overall agency performance?
  - What is the baseline for assessing performance?

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Accidents</td>
<td>Passengers</td>
<td>NTD Reporting</td>
</tr>
<tr>
<td>Roadcalls</td>
<td>Hours &amp; Miles</td>
<td>Passenger Miles</td>
</tr>
<tr>
<td>Late Pull-Outs</td>
<td>Fare Revenue</td>
<td>Energy Consumption</td>
</tr>
<tr>
<td>Missed Trips</td>
<td>Operating Cost</td>
<td>Employee Hours</td>
</tr>
<tr>
<td></td>
<td>Complaints</td>
<td>Attendance &amp; Overtime</td>
</tr>
<tr>
<td></td>
<td>Schedule Adherence</td>
<td></td>
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</table>
## Performance Measures

<table>
<thead>
<tr>
<th></th>
<th>2nd Qtr FY 2012</th>
<th>2nd Qtr FY 2011</th>
<th>% Change</th>
<th>Performance Target</th>
<th>Period Meets Target?</th>
<th>YTD FY 2012</th>
<th>YTD Prior Fiscal Year</th>
<th>% Change</th>
<th>YTD Performance Target</th>
<th>YTD Meets Target?</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cost Per Revenue Hour</td>
<td>$102.20</td>
<td>$96.52</td>
<td>5.88%</td>
<td>&lt;= $90</td>
<td>No</td>
<td>$103.27</td>
<td>$95.26</td>
<td>8.41%</td>
<td>&lt;= $90</td>
<td>No</td>
</tr>
<tr>
<td>Farebox Recovery Ratio</td>
<td>23.59%</td>
<td>22.81%</td>
<td>3.42%</td>
<td>&gt;= 25%</td>
<td>No</td>
<td>23.68%</td>
<td>22.16%</td>
<td>6.86%</td>
<td>&gt;= 25%</td>
<td>No</td>
</tr>
<tr>
<td>Average Fare</td>
<td>$1.41</td>
<td>$1.53</td>
<td>(7.84)%</td>
<td>&gt;= $1.30</td>
<td>Yes</td>
<td>$1.46</td>
<td>$1.48</td>
<td>(1.35)%</td>
<td>&gt;= $1.30</td>
<td>Yes</td>
</tr>
<tr>
<td>Subsidy Per Passenger</td>
<td>$4.56</td>
<td>$5.18</td>
<td>(11.97)%</td>
<td>&lt;= $4</td>
<td>No</td>
<td>$4.69</td>
<td>$5.19</td>
<td>(9.63)%</td>
<td>&lt;= $4</td>
<td>No</td>
</tr>
</tbody>
</table>

### Service

<table>
<thead>
<tr>
<th>Passenger Service</th>
<th>Passengers</th>
<th>Passengers Per Revenue Hour</th>
<th>Farebox Recovery Ratio</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Prior Year</td>
<td>Current Year</td>
<td>Prior Year</td>
</tr>
<tr>
<td>Route Subtotals</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1</td>
<td>9,573</td>
<td>9,640</td>
<td>14.3</td>
</tr>
<tr>
<td>12</td>
<td>338</td>
<td>631</td>
<td>2.8</td>
</tr>
<tr>
<td>15</td>
<td>242</td>
<td>196</td>
<td>12.4</td>
</tr>
<tr>
<td>21</td>
<td>1,195</td>
<td>1,398</td>
<td>5.7</td>
</tr>
<tr>
<td>3A</td>
<td>3,305</td>
<td>3,297</td>
<td>14.2</td>
</tr>
<tr>
<td>3E</td>
<td>2,837</td>
<td>2,595</td>
<td>12.8</td>
</tr>
<tr>
<td>7A</td>
<td>2,096</td>
<td>2,618</td>
<td>9.2</td>
</tr>
<tr>
<td>7B</td>
<td>2,702</td>
<td>2,905</td>
<td>15.0</td>
</tr>
</tbody>
</table>

### December 2011

<table>
<thead>
<tr>
<th>Patrons</th>
<th>Fare Revenue</th>
<th>Operating Expense</th>
<th>Revenue Service Miles</th>
<th>Revenue Service Hours</th>
<th>Patrons Per Hour</th>
<th>Farebox Recovery Ratio</th>
<th>Subsidy Per Patron</th>
</tr>
</thead>
<tbody>
<tr>
<td>248,218</td>
<td>$288,050</td>
<td>$1,443,820</td>
<td>120,563</td>
<td>9,601</td>
<td>25.9</td>
<td>19.95%</td>
<td>$4.66</td>
</tr>
<tr>
<td>4,333</td>
<td>$5,684</td>
<td>$51,188</td>
<td>9,537</td>
<td>694</td>
<td>6.2</td>
<td>11.10%</td>
<td>$10.50</td>
</tr>
<tr>
<td>4,621</td>
<td>$7,818</td>
<td>$75,970</td>
<td>13,348</td>
<td>728</td>
<td>6.4</td>
<td>10.29%</td>
<td>$14.75</td>
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</tbody>
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### FY 2012 To Date

<table>
<thead>
<tr>
<th>Patrons</th>
<th>Fare Revenue</th>
<th>Operating Expense</th>
<th>Revenue Service Miles</th>
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</tbody>
</table>
BEST PRACTICES

- Provide data definitions
- Identify “Data Managers”
- Define data sources and routine processes
- Set performance targets
## BEST PRACTICES – Define Source

<table>
<thead>
<tr>
<th>Type of Service &amp; Source Info</th>
<th>Hopper</th>
<th>Metro</th>
<th>BRT</th>
<th>Commute</th>
<th>DR Taxi</th>
</tr>
</thead>
<tbody>
<tr>
<td>Who Collects</td>
<td>MV</td>
<td>RTD</td>
<td>RTD</td>
<td>RTD</td>
<td>ALC</td>
</tr>
<tr>
<td>System Used</td>
<td>GFI &amp; PASS</td>
<td>GFI &amp; Data Point</td>
<td>APC</td>
<td>Driver Count</td>
<td>ALC Prop. System</td>
</tr>
<tr>
<td>Frequency</td>
<td>Daily</td>
<td>Daily</td>
<td>Daily</td>
<td>Daily</td>
<td>Daily</td>
</tr>
<tr>
<td>Level of Detail</td>
<td>Route &amp; Fare Type</td>
<td>Route &amp; Fare Type</td>
<td>Route</td>
<td>Route</td>
<td>Trip &amp; Type</td>
</tr>
<tr>
<td>Related Process</td>
<td>Add Route Deviations</td>
<td>Add Unallocated Passengers</td>
<td>Add Incidental Passengers</td>
<td>Add Seats Sold but not Used</td>
<td>Note Cancels &amp; No Shows</td>
</tr>
</tbody>
</table>
SINGLE SOURCE/DISTRIBUTED ACCESS

- Get data at the source; eliminate time-consuming data reconciliations
MANAGEMENT COMMITMENT

- **Use it and stay vigilant**
  - Routinely review data as a group
  - Use data as a budgeting and service planning tool
  - Use data to target areas for improvement

OR

Case Study for Creating A Statistical Information System

GARDENA BUS LINES

- Municipal System in the South Bay of Los Angeles County
- Directly operated service with a fleet of 53 buses and 8 DR vans
- Data Systems
  - Cubic fareboxes/TAP
  - City Financial System - Eden
  - Contract for service planning
  - Manual DR scheduling
  - EJ Ward for fueling
  - Plan to procure maintenance mgmt system
Case Study for Creating A Statistical Information System

SITUATIONAL ANALYSIS – SEPT. 2011

- Manual day-to-day data collection for key statistics:
  - Run slips for payroll and stats
  - Operator trip sheets - DR
- Data rekeyed to get monthly and annual statistics
- Inaccurate service plan schedule
- Cubic ridership data not used
ACTION PLAN FOR IMPROVED DATA

- Implement exception-based payroll and operating statistics (i.e., miles and hours of service)
- Utilize data and reports from the Cubic Fare Collection System
- Streamline and simplify the process
- Create Statistical Information System to organize data
SERVICE SCHEDULE

- Review run assignment calculations for accuracy
  - Platform, Deadhead, etc.
- Validate scheduled miles and hours of service
  - Foundation for exception based reporting
EXCEPTION-BASED REPORTING

- Created Excel exception-based payroll file for entry into the City Financial System
  - Payroll process improvements
    - One page per day versus 80 run slips
    - Payroll position went from 40-50 hours per week to 25 hours

- Implemented a Dispatch Log to capture exceptions to service
  - Roadcalls
  - Accidents
  - Late-Pullouts
  - Missed Trips
UTILIZE AUTOMATED FARE SYSTEM

- Ensure equipment is properly maintained
  - Coin and cash counting equipment
  - Fareboxes

- Implement revenue control procedures
  - Reconciliation procedures

- Use of full compliment of Cubic Reports
  - Maintenance
  - Analytics
Case Study for Creating A Statistical Information System

SIMPLIFY AND STREAMLINE

- Involved team to review current processes
  - Flow charts and documents
  - Identified data re-keying

- Created Statistical Information System
  - Keep it simple
  - Data in one place

- Focus on key data

- Interim steps to increased automation
Case Study for Creating A Statistical Information System

STATISTICAL INFORMATION SYSTEM

- **Actual to Scheduled Performance Statistics Reporting**
  - Eliminated driver run slips
  - Repository for performance statistics for management and outside reporting

- **Additional benefits to this reporting system**
  - Daily Dispatch Activity Reporting Log
  - Same data input for Exception Based Payroll
Create NTD deliverables and products

- Annual Apportionments
- Transit Safety & Security Statistical Analysis
- Conditions & Performance Report to Congress
- Transit Profiles

Monthly Ridership data to measure progress relative to FTA Ridership Goal

- Increase ridership by 1% annually
- Analysis of factors influencing ridership
START OF CHANGE – MAY 2000

- FTA submitted report to Congress on new revised National Transit Database

- Created FTA and Transit Industry partnership
  - Transit Systems
  - State DOTs and MPOs
  - TRB
  - NTSB and AASTO
  - APTA and CTAA
RECOMMENDATIONS – 2007

- Use current year NTD data to support FTA Performance reporting (timeliness)
- Enhance NTD Safety and Security data reporting
- Improve internet-based reporting
  - On-line, real-time validation (1,000 checks) built into internet-reporting
  - Designed to improve data integrity
  - Make transit data and profiles available on-line for industry use
- Implement State-based reporting for rural transit
National Trends and Peer Reviews

NTD WEBSITE AS A RESOURCE

What is the NTD?
Reporting Manuals
Annual Reporting
Monthly Reporting
Safety and Security Reporting
Rural Reporting
Sampling Manual
Small Systems Waiver Manual

Data, Publications and Reference Materials
NTD Glossary
NTD Reference Materials
Access NTD Data

NTD Resources
FTA / NTD Presentations, Announcements and Updates
NTD Feedback
Seminars and Training
Transit Agency Listing by Region and Other External Links

www.ntdprogram.gov

- FTA/NTD Presentations, Publications and Reference Materials
- Access NTD Data
ACCESS TRANSIT DATA

- Transit data for peer reviews and profiles of other transit agencies

**Annual Transit Profiles**

To search for profiles you may enter the agency’s NTD ID, Agency Name, City, State, etc. For example, if you would like to find profiles for all reporting agencies in the State of California, enter California. The system will return all profiles with either the word California or the abbreviation CA in their names or addresses.

If you do not know the information for a particular agency, all agencies reporting to the NTD for the last 2 RYs and their associated profiles are also available from [Transit Agency Listing by Region and Other External Links](#) page.

**Individual Profiles for All Transit Agencies in Urbanized Areas Over and Under 200,000 Population**

Enter search criteria:  

**Monthly Database**

The two files located in this section will be replaced with updated Monthly data on or about the 4th of each month.

- [Monthly Module Raw Data Release](#)
- [Monthly Module Adjusted Data Release](#)

**Safety & Security Data**

The two files located in this section will be replaced with updated Safety & Security data on or about the 4th of each month.

- [Safety & Security Time Series Data](#)
- [Safety & Security Major-Only Time Series Data](#)
### National Trends and Peer Reviews

#### NATIONAL TRENDS

**San Joaquin Regional Transit District (RTD)**

**Fiscal Year: 2011-2012**

**General Information**

- **Purchased Transportation Provided:** Y
- **Number of Routes:** 3
- **Number of Trips:** 74
- **Average Daily Ridership:** 105
- **Annual Miles:** 3,026,413
- **Total Vehicles:** 96

**Service Area Statistics**

- **Population:** 564,000
- **Average Vehicle Revenue Miles:** 3,265,253
- **Average Vehicle Vehicle Hours:** 247,500
- **Number of Vehicles:** 124
- **Number of Routes:** 12
- **Average Strikes:** 150

**Financial Information**

- **Operating Expenses:** $3,091,081
- **Sources of Operating Funds:**
  - **General Revenue:** $6,181,081
  - **Sales and Use Taxes:** $1,941,800
  - **Federal Assistance:** $1,009,400

**Summary Operating Expenses**

- **Sales and Use Taxes:** $1,941,800
- **Federal Assistance:** $1,009,400
- **Other Operating Expenses:** $3,091,081

**Income and Expenditures**

- **Operating Income:** $3,091,081
- **Operating Expenses:** $3,091,081

**Vehicles Operated in Maximum Service Uses of Capital Funds**

<table>
<thead>
<tr>
<th>Mode</th>
<th>Directly</th>
<th>Purchased</th>
<th>Revenue</th>
<th>Systems and</th>
<th>Facilities</th>
<th>Passenger</th>
<th>Other Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bus</td>
<td>116</td>
<td>0</td>
<td>$3,016,001</td>
<td>$0</td>
<td>$0</td>
<td>$0</td>
<td>$3,016,001</td>
</tr>
<tr>
<td>Demand Response</td>
<td>116</td>
<td>0</td>
<td>$3,016,001</td>
<td>$0</td>
<td>$0</td>
<td>$0</td>
<td>$3,016,001</td>
</tr>
<tr>
<td>Demand Response - Taxi</td>
<td>0</td>
<td>0</td>
<td>$0</td>
<td>$0</td>
<td>$0</td>
<td>$0</td>
<td>$0</td>
</tr>
<tr>
<td>Total</td>
<td>116</td>
<td>0</td>
<td>$3,016,001</td>
<td>$0</td>
<td>$0</td>
<td>$0</td>
<td>$3,016,001</td>
</tr>
</tbody>
</table>

**Performance Measures**

- **Service Efficiency:**
  - **Personnel Efficiency:** 0.98
  - **Vehicle Efficiency:** 0.98
  - **Operating Efficiency:** 0.98

- **Service Effectiveness:**
  - **Unlinked Passenger Trips:** 0.98
  - **Unlinked Passenger Trips per Vehicle Revenue Mile:** 0.98

- **Service Effectiveness:**
  - **Unlinked Passenger Trips:** 0.98
  - **Unlinked Passenger Trips per Vehicle Revenue Mile:** 0.98
PEER REVIEWS

A confidential consortium of mid-sized bus agencies in North America established in 2011 to:

- Learn from each other by comparing performance
- Share experiences and identify industry best practices

The group is administered by the Railway and Transport Strategy Centre (RTSC) at Imperial College London

- Visit [http://americanbusbenchmarking.org](http://americanbusbenchmarking.org)
The group convened in May 2011 in Rochester, New York to review KPIs and to begin the benchmarking process.

The group convenes annually (next scheduled for APTA Annual Meeting in Seattle).

“The benchmarking work will help agencies understand their strengths and weaknesses and where there is room for performance improvement, allowing a strategic prioritization of efforts,” said Mark Trompet, RTSC senior research associate. “The ultimate outgrowth of our work will be improved efficiencies and cost savings.”
PERFORMANCE INDICATORS

- **Growth & Learning**
  - Passengers, Miles, Hours
  - Productivity
  - Staff Training

- **Customer**
  - Service Availability
  - On-Time Performance

- **Internal Processes**
  - Peak Fleet Utilization
  - Staff Productivity
  - Absenteeism
  - Distance Between Roadcalls
  - Lost Vehicle Miles

- **Financial**
  - Total Cost Per Unit of Service
  - Operating Cost Recovery
  - Average Fare

- **Safety & Security**
  - Accidents Per Unit of Service
  - Lost Time & Staff Injuries Per Staff Work Hour
  - Passenger Injuries Per Service Consumed

- **Environmental**
  - Fuel Consumption & Emissions
Pay attention to definitions – they are important

- NTD Definition or Other (e.g., Revenue Hour with or without recovery)
- New Data Items (e.g., Absenteeism, Staff Work Hour, Schedule Adherence)

Requirements for a valid peer comparison

- Accurate data
- Timely reporting
- Consistent data definition