Service Indicators

Understanding Issues

Diagnosing and Fixing Problems

Service Indicators

- Concept suggested by consultants reviewing the funding formula.
- Concern that state's push for efficiency had come at the expense of service delivery at the local level.
- Derek created current list of Indicators. More could be added in the future.

New TIMS Text Archive

- Service Indicators are one application of a larger project: creation of a backup of your data that is as software and hardware independent as possible.

The Need for a Better Backup

- Asked to compile 10 years of TIMS data for an LEA for use in creation of student population projections.
- Many problems
  - Missing years
  - Backups made with archive software they no longer had
  - Backups on media they/we could no longer read

The Need for a Better Backup

- Gave rise to desire for a more “universal” backup that would not so easily become unusable with time or be so easily lost.
- Text archive
  - Not tied to specific software
  - Can be read by the simplest of editors.

Need for security

- Text files can be easily read by anyone.
- Transfer requires security measures.
  - Transferred via secure ftp.
  - We will be “upping” transfer security by giving each LEA a key that will identify you to our server when you try to ftp.
  - Stored on a hard drive in TIMS Support office

TIMS Text Archive

- Student
  - Stuarch: Student name, locations, schools, grade, race, sex, distance to school
  - Stutrnarch: students' stop locations, stop times, runs, routes
- School
  - Schlarch: school code, name, bell times, grades, programs
  - Clusarch: cluster code, name, schools, times

TIMS Text Archive

- Transportation
  - Minmax: earliest and latest stop times, earliest and latest am and pm bell times
  - Stpsrvarch: stops, loads, stop times, frequencies, stop types
  - Runrtearch: run times, length, mileage, loads, frequencies, routes

Limitation of a Text Archive

- While relatively stable as a record of your data, text files are not easily utilized.
- Creation of a relational database
  - Text files are imported into database

TIMS Database Archive

- Single, statewide, multi-year database
  - Makes the data available for querying
  - Coded to allow reports for whole state or a single LEA
  - Data will be added year by year and will be queryable by year
  - Will include railroad crossing report.

TIMS Database Archive

- Anticipated users:
  - DPI
    - Analysis (service indicators, other)
  - LEAs
    - School planning
  - DOT
    - Railroad reports
      - We will produce a single, statewide report that will include data for all LEAs that have completed the TIMS railroad report setup.

You still need to EltZip

- The text archive will probably be saved only once per year.
- It’s not a substitute for your regular backup program.

Current Set of Service Indicators

- Average Ridetime (AM and PM)
- Percent of Routes w/ Multiple Runs to Same School (AM and PM)
- Average of Shortest Run Time within Set of Multiple Runs to Same School (AM and PM)
- Average # Runs per Route (AM and PM)
- Range of AM School Starting Times
- Earliest AM Stop
- Latest PM Stop

Service Indicators and Data Accuracy

- Accuracy in TIMS more important than ever
- TDTIMS looks at four, summary numbers that can hide a multitude of sins.
  - As long as summary numbers were within bounds (at least 90%), errors in individual records didn't matter.
- Service indicators reveal problems in individual records.

Indicators Most Affected by Data Problems

- Measures involving times
  - Average Ridetimes
  - Average of Shortest Multiple-Run Times
  - Range of AM School Starting Times
  - Earliest AM Stop
  - Latest PM Stop

Indicators Most Affected by Data Problems

- Result from well-known culprits:
  - Bad Stop Locations
  - Bad Stop Orders
  - Bad Run Directions
  - Bad School Bell and Window Times

Data Errors that Affect the Quality of the Service Indicators

- 12:00 am stop times

TIMS Management Issues That Affect the Quality of Service Indicators

- Missing District Ids
- Programs
- Mid-day runs
- EC/SN Databases

TIMS Management Issues

- Missing District Ids
  - Common in EC databases or in districts that rely upon manual entry of students into TIMS
  - Inhibit ability to track students from year to year
  - Ability to track is useful for planning uses
- May require district id for students to be counted in TDTIMS as riders.

Programs

- When a school is created, a Default program for the school is created along with it.
- Bell times are associated with Programs, not directly with schools
- The TIMS Program feature allows you to accommodate educational programs that result in a school having more than one set of bell times.

Programs

- The Minmax Report (report of stop and bell times) reports by Program.
- The Service Indicator “Range of AM Starting Times” only considers the bell times for schools’ Default Programs.
- Failure to create programs in TIMS to represent LEA programs with special bell times results in inaccurate bell times and misleading bell time ranges.

Programs: Example

- All schools have 8:00 am bell, arrival window 7:30 to 7:55.
  - Range of school starting times is 0.
- At one school, new program requires that some students arrive at 1:00 pm.

Programs: Example

- Wrong way to handle
  - Move bell time on default program to 1:00 pm and make arrival window stretch from 7:30 to 12:55.
    - If earliest bell time in district is still 8:00 am, range of opening times is now 300 minutes.

Programs: Example

- Right way to handle
  - Create a program for 1:00 pm students at their school.
    - Default Program still has 0 minute spread on bell times
    - New program is reported separately.

Mid-Day Runs

- Mid-day runs are often the counterpart of Programs.
- The school receiving students has the Program; the schools sending students to the Program have mid-day runs to deal with.
- Failure to enter mid-day runs as such can result in seemingly inaccurate stop times.

EC/SN Databases

- Secondary databases should contain only the students that really belong in that database.
- At least, only students that belong in the database should be assigned.

Reports to Help You

- User-Defined Reports
  - Stops, Runs, Routes
    - Stop Times after 5:00 pm
    - Stop Times Before 6:00 am

Extreme Stop Times Reports

Pickup Times Before 6:00 AM

Time at Stop	Stop ID	Run ID	Route	Run End	Bell	Assigned	Headcount
5:38 AM	328.113	328.001	4	7:50 AM	8:00 AM	2	
5:38 AM	328.112	328.001	4	7:50 AM	8:00 AM	2	
5:40 AM	328.114	328.001	4	7:50 AM	8:00 AM	1	
5:42 AM	320.003	322.904	265	7:50 AM	8:00 AM	1	
5:42 AM	344.032	350.004	269	7:30 AM	8:00 AM	1	
5:42 AM	350.025	350.004	269	7:30 AM	8:00 AM	2	

- Due to limitations in the Edulog Report Module, this report includes a record for every stop.
- However, shows record only for stops that meet the criterion.
- If you wish to print, send to Excel spreadsheet and print only records of interest.

Students With At Least One Stop Not On Route

Students on Stops not on Routes

44 student records were found with stops not on routes.

		Edulog ID	AM Stop	AM Run	AM Route	PM Stop	PM Run	PM Route
School	308	215	308.004001			308.004002		
		1105				308.005002		
		2150	308.004001			308.004002		
		2160	308.004001			308.004002		
		2167	308.004001			308.004002		
		2344	308.006001			308.006002		
		2555	308.006001			308.006002		
		5741	308.004001			308.004002		
		6195				308.005002		
		6629	308.005001			308.005002		
		6927	308.005001			308.005002		
		7279	308.005001			308.005002		
School	312	103	312.074001	312.006				
		210	312.073001	312.006		312.073002	312.106	

Student Ridetime Report

03/06/2007

STUDENT RIDE TIMES

Student id	Student Name	School	Grade Program	Days	AM Ride Time	PM Ride Time	Total Ride Time
2	BARBOZA VIVES, BRANDON	328	02	MTWUF--	8	145	153
5	BOND, CALEY	328	02	MTWUF--	90	64	154
7	GRAINGER, LUCAS	328	01	MTWUF--	78	76	154
9	BOSWORTH, DAKOTA	328	01	MTWUF--	47	32	79
10	ABBOTT, KARI	328	KI	MTWUF--	71	7	78
11	ACOSTA, DANIELA JADE	362	03	MTWUF--	0	112	112
14	BRENES, ABRAHAM	328	01	MTWUF--	6	148	154
15	LAMB, AUSTIN	328	03	MTWUF--	2	49	51
16	BRIGGS, ZACKARY	328	01	MTWUF--	76	78	154
17	BROWNING, MACKENZIE	328	01	MTWUF--	78	76	154
18	BURRELL, HAILEY	328	KI	MTWUF--	86	68	154

- Export to text file, open and sort in Excel.
- Next version of TIMS gives Excel option.

Review of Indicators

Average AM and PM Ride Times

- Include all the time a student is on a bus.
  - Sum the time on legs of transfers.
- Affected by anything that causes incorrect times on runs
  - Bad stop locations
  - Bad run directions
  - Incorrect ell times

Percent of Routes with Multiple Runs to Same School AM and PM

- Of concern due to time students must spend
  - waiting at school in the morning if they are on first trip made by their bus
  - Waiting at school in the evening if they are on second or third trip on their bus.
- This cell is blank if you do not have routes that visit the same school more than once.

Average of Shortest Multiple-Run Time AM or PM in Minutes

- This will be blank if you do not have routes that visit the same school more than once.
- Affected by bad
  - route directions

Average Runs per Route AM/PM

- Numbers below 1 indicate a data issue
- A value of 1 means all routes for that time of day have only one run

Range of AM School Starting Times in Minutes

- Zero means that all schools are set to the same AM start time in TIMS.
- Ranges exclude mid-day runs and runs associated in TIMS with a program other than the default program.

Range of AM School Starting Times in Minutes

- Large ranges may result when mid-day runs and runs associated with programs that have special bell times are not managed properly.
- For example,
- Bell times
- Programs
- Mid-day runs
- Run directions

Earliest AM Stop / Latest PM Stop

- 12:00AM indicates a problem with stop location or run directions
- Other times out of normal range indicate problems with route directions
- Two common errors
  - Very early am times, very late pm times
  - 12:00 am times (which can occur on am or pm)

Earliest AM Stop / Latest PM Stop

- 12:00 am times (can occur on am or pm runs)
  - Indicates a problem that prevents software from calculating a travel time.
    - Stop on untravelable segment.
    - Stop with bad location nodes.
      - Often causes 12:00 am times on all stops before problem stop on am run, after problem stop on pm run.
      - Fix the problem stop and the others are given valid times.

Earliest AM Stop / Latest PM Stop

- Very early am times, very late pm times
  - Inaccurate route directions
    - Geocode problems
    - Incorrect stop orders
  - Speeds too slow