SRTP AND SERVICE QUALITY MONITORING
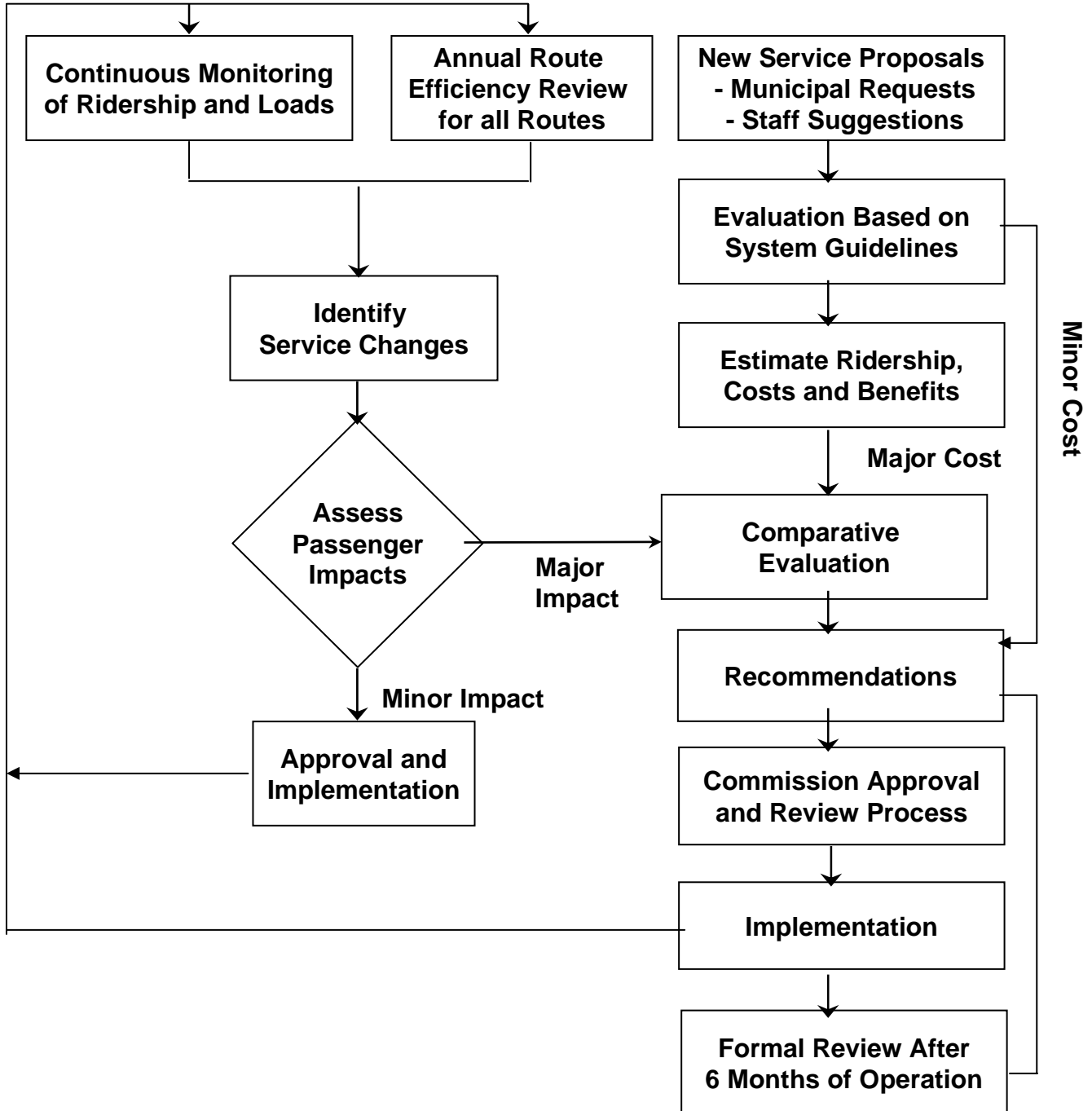
Outline:

1. Current Practice in SRTP

2. Possible Improvements
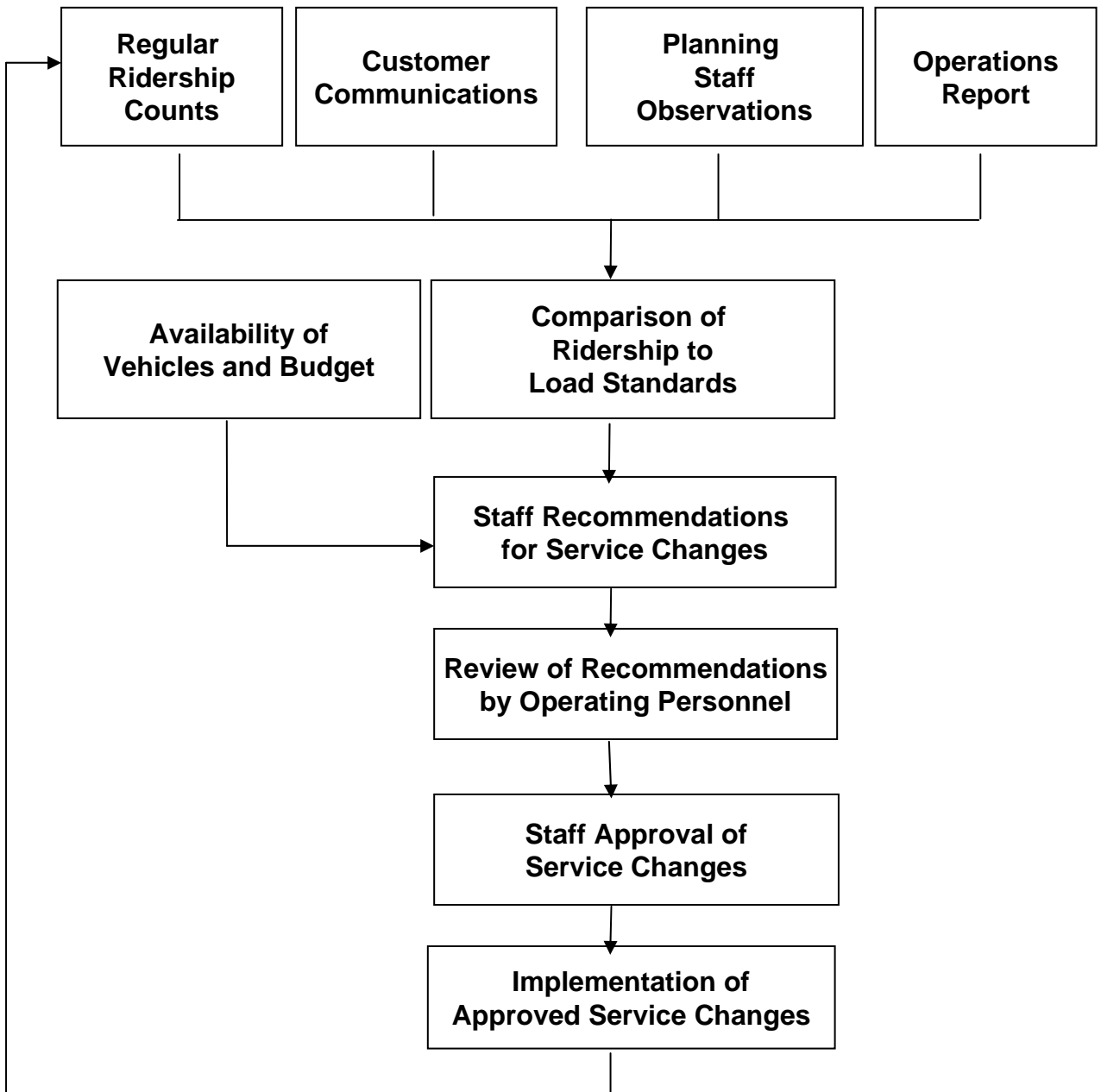
3. Service Quality Monitoring

Issues in Setting Up a Short-Range Transit Planning Process

- **Role of budget constraints in the process**

    =>   before budget is set

    =>   after budget is set

- **Role of standards and constraints vs investing resources to obtain best ridership results**

- **Consideration of new service options vs protection of existing services**

- **Allocation of analysis/planning effort to "problem" routes vs other routes**

- **What form of standards/guidelines to use**

- **Focus on individual routes or route as component of system**

TTC Service Standards Process: Overview

Continuous Monitoring of Ridership and Loads

Annual Route Efficiency Review for all Routes

New Service Proposals
- Municipal Requests
- Staff Suggestions

Evaluation Based on System Guidelines

Identify Service Changes

Estimate Ridership, Costs and Benefits

Major Cost

Minor Cost

Assess Passenger Impacts

Major Impact

Comparative Evaluation

Minor Impact

Recommendations

Approval and Implementation

Commission Approval and Review Process

Implementation

Formal Review After 6 Months of Operation

TTC Service Standards Process: Ridership Monitoring and Service Adjustment

```
┌──────────────┐  ┌──────────────┐  ┌──────────────┐  ┌──────────────┐
│   Regular    │  │              │  │   Planning   │  │              │
│  Ridership   │  │   Customer   │  │    Staff     │  │  Operations  │
│    Counts    │  │Communications│  │ Observations │  │    Report    │
└──────────────┘  └──────────────┘  └──────────────┘  └──────────────┘
```

```
┌──────────────────┐     ┌──────────────────┐
│                  │     │   Comparison of  │
│  Availability of │     │    Ridership to  │
│Vehicles and Budget│    │   Load Standards │
└──────────────────┘     └──────────────────┘
```

```
┌──────────────────┐
│Staff Recommendations│
│ for Service Changes │
└──────────────────┘
```

```
┌──────────────────┐
│Review of Recommendations│
│ by Operating Personnel  │
└──────────────────┘
```

```
┌──────────────────┐
│  Staff Approval of │
│  Service Changes   │
└──────────────────┘
```

```
┌──────────────────┐
│ Implementation of  │
│Approved Service Changes│
└──────────────────┘
```

TTC Service Standards Process: Route Efficiency Review Program

```
┌─────────────────────────────┐        ┌─────────────────────────────┐
│  New Riding Count on Route  │        │         Year-End            │
│                             │        │   Financial Performance     │
└─────────────────────────────┘        └─────────────────────────────┘
              │                                       │
              ▼                                       ▼
┌─────────────────────────────┐        ┌─────────────────────────────┐
│ Operating Experience Review │        │       Route Economic        │
│   - Complaints              │        │    Performance Review       │
│   - Service Regularity      │        │                             │
└─────────────────────────────┘        └─────────────────────────────┘
              │                                       │
              └──────────────────┬────────────────────┘
                                 ▼
                ┌─────────────────────────────┐
                │   Route Structure Review    │
                │    - Branch Alignment       │
                │    - Time Period Service Levels │
                └─────────────────────────────┘
                                 │
                                 ▼
                ┌─────────────────────────────┐
                │  Time Period Service Review │
                │   - Surge Loading           │
                │   - First/Last Trips        │
                └─────────────────────────────┘
                                 │
              ┌──────────────────┴────────────────────┐
              ▼                                        ▼
┌─────────────────────────────┐        ┌─────────────────────────────┐
│  Minor Route and Service    │        │  Major Route and Service    │
│  Changes Recommended        │        │  Changes Recommended        │
└─────────────────────────────┘        └─────────────────────────────┘
              │                                        │
              ▼                                        ▼
┌─────────────────────────────┐        ┌─────────────────────────────┐
│       Implementation        │        │        Referred to          │
│                             │        │   Comparative Evaluation    │
└─────────────────────────────┘        └─────────────────────────────┘
```

TTC New Services Criteria

1. **Must serve people beyond 300 meters from current TTC service**

2. **Must maximize interconnections with rapid transit**

3. **Must result in a net benefit for customers**

    - **net benefit is measured by change in weighted travel time with**

    weighted travel time =

    A*in-vehicle time + B*waiting time +

    C*walking time + D*transfers

    and *A* = 1.0, *B* = 1.5, *C* = 2.0, *D* = 10.0

TTC Financial Standards and Comparisons

Single measure used to evaluate service change proposals is:

> customers gained (lost) per dollar spent (saved)

Used for evaluating:
- new service proposals
- possible service reductions
- fare changes

The financial unit is the net cost (cost-revenue) associated with the change.

Currently, the threshold for new service is 0.23 new customers per dollar spent.

Services with performance of less than 0.23 customers per dollar spent are examined for possible cost reduction annually.

Service Change Process

- **Major service changes evaluated twice per year resulting in a ranking against other proposals and productivity for existing services**

- **Board provided with recommended service changes and ranked list of all other proposals evaluated and system average performance**

- **Experimental services are designated and evaluated after six months operation**

A Critique Of Current Practice

- **Focus is on poorly-performing routes.**

- **Data limitations -- both type and quality.**

- **Measures not always closely tied to objectives.**

- **Focus on individual route performance rather than network contribution.**

Important Factors

- **Multiple Goals of Agency**

- **Constraints on Planning Resources**

- **Limitations of Technical Analysis**

Suggested Modifications

- **Action-Centered Screening**

- **Explicit Recognition of Multiple Objectives**

Summary of Generic Actions By Level

A. Area Coverage Level

1. New route
2. Route extension
3. A small set of routes replaced by a new set
4. Route abandonment
5. Shortening a route
6. Route realignment

B. Route Structure Level

1. Route splitting
2. Zonal service
3. Express/local service
4. Linking two routes

C. Scheduling Level

1. Changes in route frequency
2. Changes in departure times of individual trips
3. Changes in layover time, positioning time, etc.
4. Modify running times
5. Partial deadheading

The Problem-Centered Approach

Problem	Indicators	Possible Actions
A. Poor productivity	Rev/cost	Decrease frequency
	Pass/veh hr	Eliminate route or route segments
	Load	Modify schedule
B. Overcrowding	Load	Increase frequency
C. Unreliable Service	% of trips late	Increase allowed time
		Modify route

The Action-Centered Approach

GENERIC ACTION	FAVORABLE ROUTE CONDITIONS

A. Area Coverage Level
   1. **Eliminate Route Segment** — **Low ridership generation on segment**
      Vehicle savings possible from elimination
      Higher frequency possible from elimination

B. Route Structure Level
   1. **Split Route** — **Low productivity**
      Uneven load profile
      Long route

   2. **Zonal** — **Tapering load profile**
      Long route
      High ridership

   3. **Express/Local** — **High ridership**
      Tapering load profile
      Long route
      Large time differential local/express

C. Scheduling
   1. **Increase Frequency** — **Overcrowding**
      Moderate rather than high ridership
      Even load profile

   2. **Decrease Frequency** — **Low productivity and loads**
      Headway below policy levels

   3. **Eliminate Trips** — **Low ridership on trips**
      High cost savings from elimination

   4. **Increase Running/ Layover Time** — **Poor schedule adherence**
      High loads

   5. **Partial Deadheading** — **Large imbalance in flows**
      Large time differential in service/deadhead
      High frequencies

Proposed Short-Range Transit Planning Process

Support Functions　　　**Decision Tasks**　　　**Interface with Other Agency Units**

Data Collection

Ridership & Cost Data Collection	Driver Participation Program
Planners Informal Data Collection	Community Relations Information
Operations & Maintenance Data	General Travel Needs Information

Data Analysis

Data Summaries	Performance Measures

Problem Identification
- problem-centered
- action-centered

Design of Actions

Analysis of Each Action

Recommendations

Decision

Implementation

Scheduling

Operations

Marketing and Community Relations

Interaction with Decision Makers

Scheduling

Operations

Marketing and Community Relations

Techniques Used to Collect Route Level Information/Data from Riders

	Under 50 buses (42)	51 to 200 buses (34)	201 to 500 buses (16)	501 to 1000 buses (9)	Over 1000 buses (10)	Total
Focus groups	7	9	6	5	4	31
General market research	12	18	8	3	5	46
On-board surveys	33	29	13	7	8	90
media-based surveys	2	3	3		2	10
Meetings with organized riders' groups, community councils, etc.	13	13	7	5	6	44

Techniques Used to Collect Route Level Information/Data from Operators

	Under 50 buses (42)	51 to 200 buses (34)	201 to 500 buses (16)	501 to 1000 buses (9)	Over 1000 buses (10)	Total
Operator quality circles	8	7	3	2	3	23
TQM (Total Quality Management)	9	5	1	4	1	20
Special union-management meetings	10	12	5	5	7	39
Route or garage-based teams or task forces	4	8	6	5	6	29
Employee suggestion plans or comment processes	29	30	13	9	7	88

Service Quality Monitoring

Increasing recognition of importance of monitoring and reporting service quality and customer satisfaction on a regular basis:

- **Customer Satisfaction Index**

  5 agencies (Akron, Chicago, Minneapolis, Philadelphia and Portland) attempted to develop a CSI for the transit industry (funded by IDEA Program)

- **MBTA Service Quality Report Card**
  It would include measures of:

  => **Comfort -- passenger crowding**
  => **Communications -- response time to complaints, waiting time for information calls, calls completed successfully**
  => **Convenience -- population coverage, service frequencies, trip times**
  => **Customer Satisfaction -- complaints**
  => **Reliability -- elevator and escalator availability, schedule adherence, missed trips, vehicle breakdowns**
  => **Security -- crime, passenger injuries**

  plus results of Customer Satisfaction Survey

Issues:

Is information meaningful at system level?
Will results help identify areas where improvement can be achieved?
Can the additional data collection and analysis be justified?