



Implementation of a Methodology for Determining Quality of Service in Bus Routes *Research Proposal*

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Current Situation

TU Ridership

- Current range is 20,000 – 30,000 passengers, daily.
- 115,000 daily ridership expected by year 2010.
- A small amount of TU riders come from buses.
- Perception of poor and unreliable bus system.
- Lack of coordination between bus and TU.

Transit Network in SJMA



Objectives

- Identify the bus routes to evaluate. ⚡

Evaluation of Quality of Service

- Analyze quality of service of buses from the user's point of view.
- Identify and analyze different existing methodologies for the determination of a LOS for buses to be applied in Puerto Rico. ⚡
- Apply the LOS method to the selected bus routes.
- Design an effective method to provide reliability information to the users.

Objectives (cont.)

- Analyze the quality of service offered to users by taking in consideration delays, headways, and travel speed.
- Identify critical segments of delay in routes.
 - Identify what is a critical delay according to the user.
- Suggest possible roadway and bus service modifications.

Assesed Methodologies for Evaluating Transit Quality of Service

- Florida Department of Transportation and Transit Level of Service
- Highway Capacity Manual
- Transit Capacity and Quality of Service Manual

Chosen Methodologies for Evaluating Transit Service Quality of Service

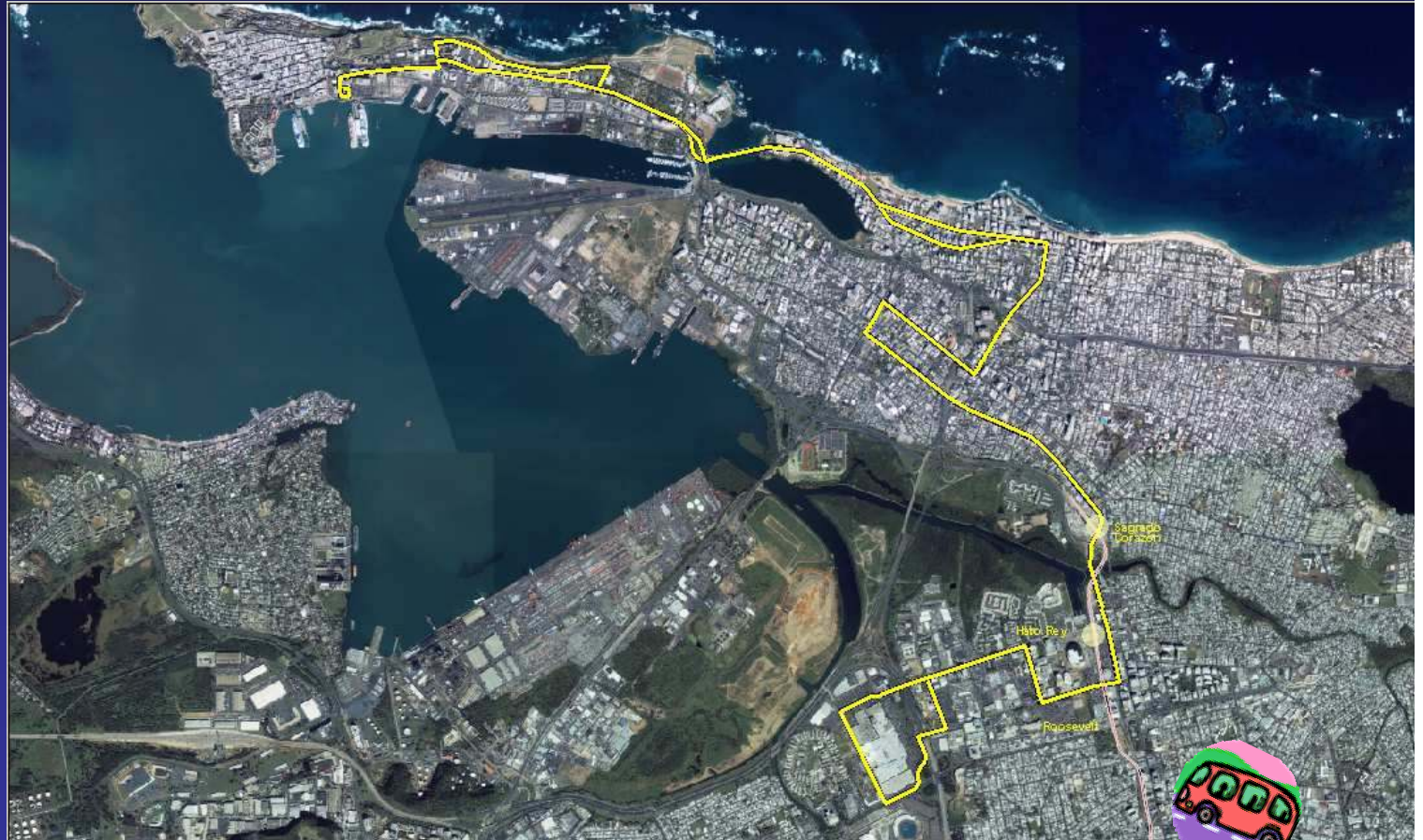
- Transit Capacity and Quality of Service Manual
 - Extremely similar to the HCM.
 - Assesses Quality of service through:
 - Availability
 - Comfort and Convenience
- FLOS – Recommendations

Scope / Limitations

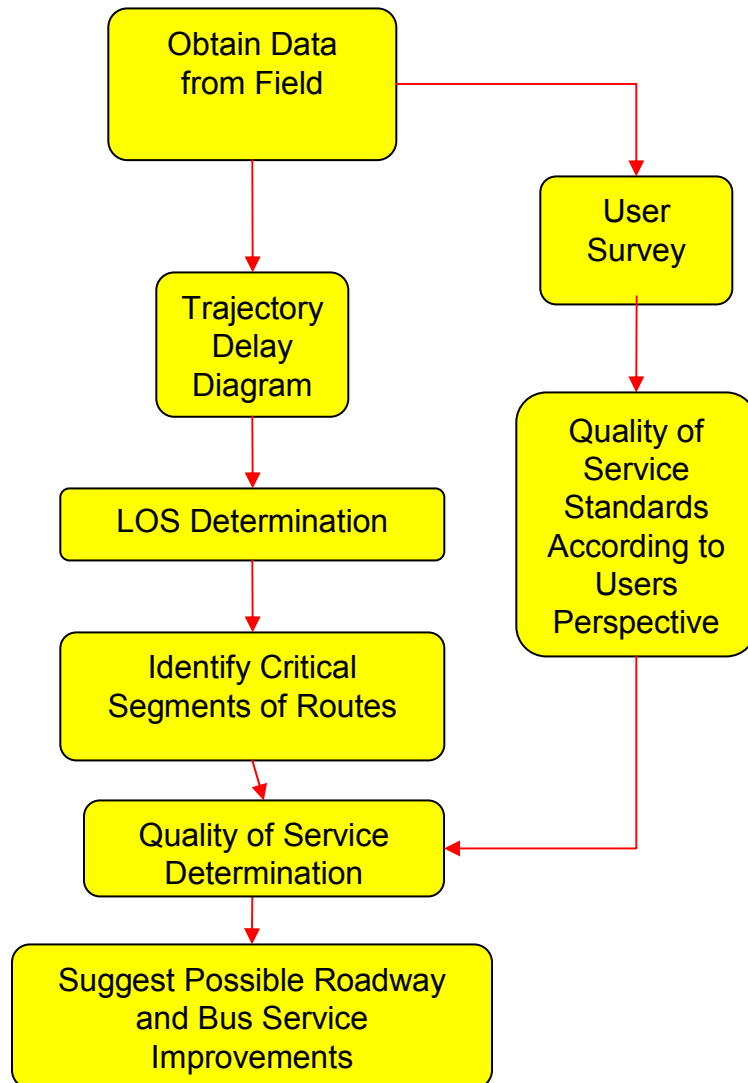
- Quality of Service
 - Transit Service Measure
 - Using LOS
- No Transit Performance Measure
- Capacity is not considered
- Passenger's Point of View

Bus Routes

- A-3
- B-21



Methodology



Factors for Analysis

- Headway
- Hours of Service
- On-time Arrivals
- Standing Passenger Areas

LOS	Avg. Headway (min)	veh/h	Comments
A	<10	>6	Passengers do not need schedules
B	10-14	5-6	Frequent service, passengers consult schedules
C	15-20	3-4	Maximum desirable time to wait if bus/train missed
D	21-30	2	Service unattractive to choice riders
E	31-60	1	Service available during the hour
F	>60	<1	Service unattractive to all riders

Taken from the Transit Capacity and Quality of Service Manual

Data Obtained

- AMA-TU Transference Data
- APC- Preliminar/ Uncalibrated
- Passanger Loading- for practice.

Automatic Passenger Counter Data

DATE	DAY	UNIT		BOARDING	ALIGHTING	DIFFERENCE	> 10 %	< 10%
		APC	AMA				DIF.	DIF.
14-Nov 05	LUNES	62	2002-07	16	419	(403)	-96.2%	
		66	20001	3436	2947	489	14.2%	
		68	20003	4231	2442	1789	42.3%	
		73	20008	2024	1487	537	26.5%	
		83	20018	0	0	0		
		87	20022	3246	1790	1456	44.9%	
		112	20047	0	0	0		
		125	20060	17	366	(349)	-95.4%	
		128	20063	2624	2095	529	20.2%	

Obtained Data- M2

Stop	IN	OUT	Accumulated IN	Accumulated Out	Occupancy
1	36	0	36	0	36
2	1	1	37	1	36
3	0	10	37	11	26
4	1	2	38	13	25
5	0	3	38	16	22
6	2	1	40	17	23
7	0	9	40	26	14
8	0	3	40	29	11
9	1	0	41	29	12
Terminal Parada 18	0	12	41	41	0

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QUESTIONS

