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Executive Summary

Feasibility Analysis of the Integration of the Público System: Bayamón Case Study

by

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Executive Summary

Introduction

Transportation is a necessity in our society in order to achieve social and economic activity. In San Juan Metropolitan Region, Tren Urbano is a medium of transportation that urges to satisfy the transportation necessities of SJMR residents. Mi approach for the Tren Urbano research project is towards the público system, which is actually the main public transportation network of Puerto Rico. A special focus will be made on the route structuring of Kuilan terminal building, and its economic activity. Kuilan terminal building is used as the reference landmark for the research, because it is the second largest terminal building in SJMR and it is located in downtown Bayamón. It is also important to know that Kuilan terminal building is located one block from Bayamon station of the Tren Urbano alignment.

Before exploring extensively on the público subject, it is recommended to learn a little theory on the role of transportation in the economic activity of certain sectors, such as the service sector, on a microeconomic scale.

Theory and Motivation: Transportation in a business community¹

We wish to know how businesses are run in downtown Bayamón. Downtown Bayamón is a commercial zone (not an industrial zone) where small businesses, cafeterias, clothing stores, department stores, etc invade streets and avenues. This type of economic activity is known as services because it is not goods producing. Goods are those, which are necessities or consumed by customers. Examples of goods are: agriculture, fishing, forestry, mining, construction and manufacturing. What we know as a service is any activity that is not goods producing. These do not require large amounts of spatial area in order to operate, therefore can be localized and concentrated on city centers, as well as conventional areas. The fast growing service sectors usually give more priority to the different requirements of transportation, than what goods-producing sectors give priority. Service industries are little affected by large-scale economies and as a result they can relocate their facilities to serve the markets in a comfortable way. This gives free way to uncontrolled development of which is typical in Bayamón, as well as many in urban centers.

Different types of activities categorize the service sector. These are:

- Service to goods-producing industries, also known as retail and distributive services (transportation, distributive sales, and retail sales)
- Service to individuals, also known as customer services (tourism, food services, education, health services, etc.)
- Service to businesses (accounting, engineering, information and computation systems, legal services, etc.)
- Services without profit ends
- Services without profit ends (education)
- Government services

¹ The following information is an extract from Appendix A of the National Cooperative Highway Research Program Report 421: Economic Trends and Multimodal Transportation Requirements.

Businesses have three main requirements of passenger transportation, even though the level of importance of these to the competitiveness of the industry varies among different sectors.

These requirements are:

1. Access for the employer for the daily commuting.
2. Access for the client.
3. Work related journeys.

These three requirements of transportation must be provided by Tren Urbano to operate effectively in terms of mass transportation. Tren Urbano service will provide a fixed schedule and comfort at a reasonable price. Each station serving Tren Urbano passengers must provide facilities to stimulate economic growth in the nearing areas.

The following table presents a summary of the three main transportation requirements, the tendencies and implications of the modal selection for each economic sector.

Sector/Industry	Transportation Requirements	Modal Selection	Observed Trend
Employee access	<ul style="list-style-type: none"> • Labor pool within a certain commuting distance • Easiness and cost of commuting 	<ul style="list-style-type: none"> • Auto • Public transportation 	<ul style="list-style-type: none"> • Easiness of commuting affects the decisions localization of fast growing service and manufacturing industries, of sophisticated technology and information
Client access for businesses serving local and regional markets	<ul style="list-style-type: none"> • Availability of quality public transport • Traffic relief • Availability of parking space for a low cost • Reliability of time of journey • Access to highways and main road 	<ul style="list-style-type: none"> • Auto • Public transport and taxi 	<ul style="list-style-type: none"> • Transportation access is a determining aspect on the decision of localization • When congestion or prices affect the demand, businesses provide trolley services, parking facilities, shuttle buses, or subsidized public transportation
Customer access for businesses serving tourism	<ul style="list-style-type: none"> • Cost • Modal selection 	<ul style="list-style-type: none"> • Air transport • Public transport or taxi 	<ul style="list-style-type: none"> • Growing number of luxury trips
Business trips	<ul style="list-style-type: none"> • Reliability • Quickness • Comfort • Geographical coverage • Modal selection • Cost 	<ul style="list-style-type: none"> • Air transport • Public transport or taxi • Amtrak 	<ul style="list-style-type: none"> • Decision of localization y competitiveness of the business are affected by traffic jams, flight delays, etc.

Employer access, client access, and the dealer affect the economic behavior. With this theory I intend to compare the commerce in downtown Bayamón with the observed trends by research studies made nationwide. To accomplish this it will be necessary to collect economic data of downtown Bayamón.

Progress: Interviews and Findings

The interviews conducted were to the professionals working directly and indirectly in the area of transportation. The interviews were conducted at the Public Service Commission, the Department of Transportation and Public Works, at Kuilan Terminal Building, and at Tren Urbano Office. The first interview was made in PSC at the Urban Planning Board. Mrs. Erika Columna and Mr. Esteban Rodriguez were among the interviewed. The Urban Planning Board's role concerning the público network is to define and assign routes to the operators, through transportation studies and citizen complaints. The Public Service Commission is also responsible for dealing with the legal issues concerning the público operators, as well as complaints filed by the clients or by the operators. These legal issues are settled through a spokesman representing a group or an association of operators. One of these spokesmen is Lic. José Cátala, leader of the Public Driver Association (Asociación de Choferes Públicos). Since he is the leader of the main association of operators that is localized in Kuilan, his contact is indispensable for this research.

In the meeting with Mrs. Columna and Mr. Rodriguez, the latter one delivered a visual schematic with a map of SJMR, and the main público routes parting from Kuilan traced out. Mrs. Columna delivered a spreadsheet with the route codification established at PSC, the description of each route, and the quantity of público carriers per each route. These deliveries will facilitate my research by identifying which are the routes with the most commercial activity and the accessibility provided via público or by private transportation. The routes from Kuilan, be local or intercity, take off in four cardinal directions. The principal avenues covered are Comerío Ave. (PR-167) and PR-2. Both avenues concentrate the major commercial activity of Bayamón, and as well are the principal arteries of the city.

A brief meeting was made with Lic. José Cátala, leader of the Público Drivers Association. During the meeting he spoke about how things run in the Kuilan terminal. Some of these happenings are off the record, because they are matters that the PSC does not want to interfere. They are treated inside the association and dealt with this man. The overview of the happenings at Kuilan is that, even though the público operators are not participating directly with the Tren Urbano integration, they want to learn more about the train, in terms of the feedback that they will receive once the train begins operations in May 2001. There is a feeling that they are not being considered, and attempts of negotiation have been futile so far. They also believe that the train will be competition rather than a larger network of public transportation in SJMR. Some of the público routes are in the alignment of Tren Urbano, so some of these feelings are based on evidence, and so far no negotiations have succeeded for their sake. Negotiations must succeed for Tren Urbano to begin operations with the public transportations system of SJMR helping out, otherwise Tren Urbano will find itself competing with the público operators during the early stages of operations and it may have a negative impact during the long run. Mr. Cátala offered to help during the research, even though it has academic ends. A future meeting is planned, to organize a survey in Kuilan.

At the Department of Transportation and Public Works, Eng. Freya Toledo met with me to discuss the matters concerning the negotiations with the público operators. Eng. Toledo is at the other end of the negotiation table, and she is the head of the new board known as Intermodal Transportation Management. Mrs. Toledo talked about the

problems having the DTPW settling negotiations with the público operators. The main obstacle during this process is lack of funds to integrate the público operators. Some concerns are the appearance of the carriers, since the vast majority are vehicles that need an upgrade to make the rides more comfortable for the passengers. DTPW does not have the money to invest on the públicos, so it is difficult to compromise without pointing out the economic benefits that the operators will receive. Another concern is the age of most drivers. The average age of an operator is over 60, and their driving skills are affected as they get older. Another concern is the lack of union among the operators. As we know, the operators are private entities, and this makes it more difficult to raise one voice together because each one will protect their interests, not the others' interests. Mrs. Toledo's point of view lies in the fact that negotiations won't succeed as long as the operators don't negotiate as one, and as long as there is no sufficient funding for the vehicle upgrading and younger operators emerge.

At Tren Urbano Office, Mr. Squires and Mrs. Berry are working also in this process. Mr. Squires pointed out that although there are several alternatives being considered, there is nothing official in the process and it still has not being taken place. Mr. Squires delivered one of the proposals, by Multisystems, however I have not yet comprehended the material.

The Numbers: Section 15 Report of the Público System for SJMR²

A study is made each fiscal year for DTPW by MTCG, Inc. that includes statistical information about the público system of SJMR. In the report the numbers present data of the passenger miles (passenger per trip distance) of the públicos, unlinked trips (quantity of passengers), and trip miles (vehicle miles) all based on an annual expansion. The report is divided in four seasons: Summer Vacation 99, First Semester 98, Christmas 98, and Second Semester 99. Two methods of surveying are used: screen line cordon count and checkride survey. The screen line cordon count is a surveying method in which the surveyor locates at a strategic point of a route, and takes readings on the frequency of the service along that point of the route, the license plate of the vehicle, and the quantity of passengers inside the vehicle. The second method, the checkride survey, is based on a surveyor that takes readings inside the vehicle for each stop the vehicle makes, and the amount of passengers take get on and off in every stop. The figures point out several findings: operations are most abundant during mid day, and most routes operate less frequently during the afternoons. Some routes operate effectively, but many are deficient. The amount of carries per route is also variable, as it depends on the demand. The graphs show numbers for the second survey, which represents the first semester 98-99. The survey was made 95 days of the season, including Saturdays and Sundays, in which the operations are limited.

Preliminary Conclusions

The conclusions so far are the following:

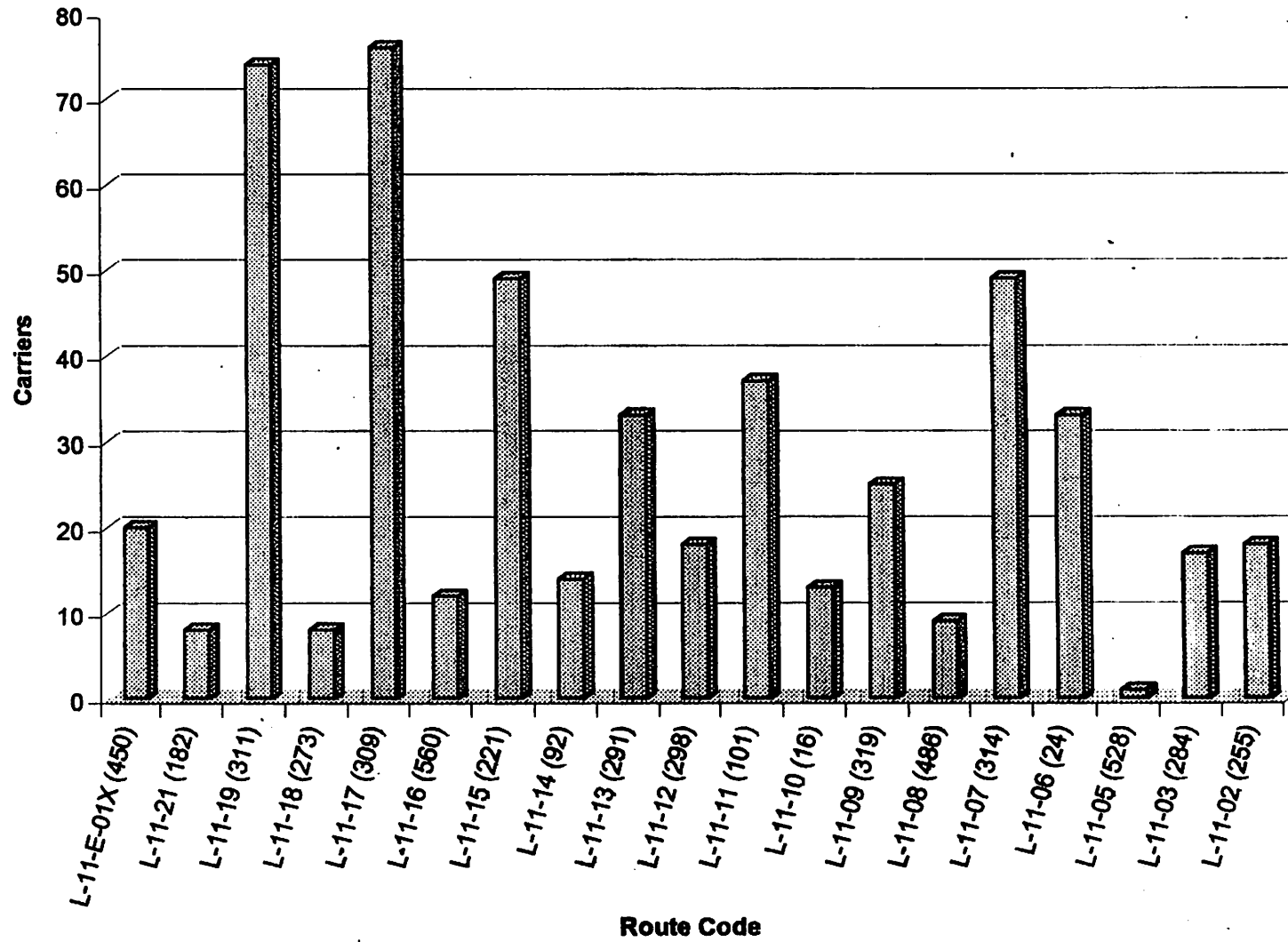
- Downtown Bayamón is mainly a *service* sector, which relies heavily on access and transportation requirements.

² The following material is an extract of an annual report presented by Management & Technical Consulting Group, Inc., for DTPW containing statistical expansions on the público system of SJMR.

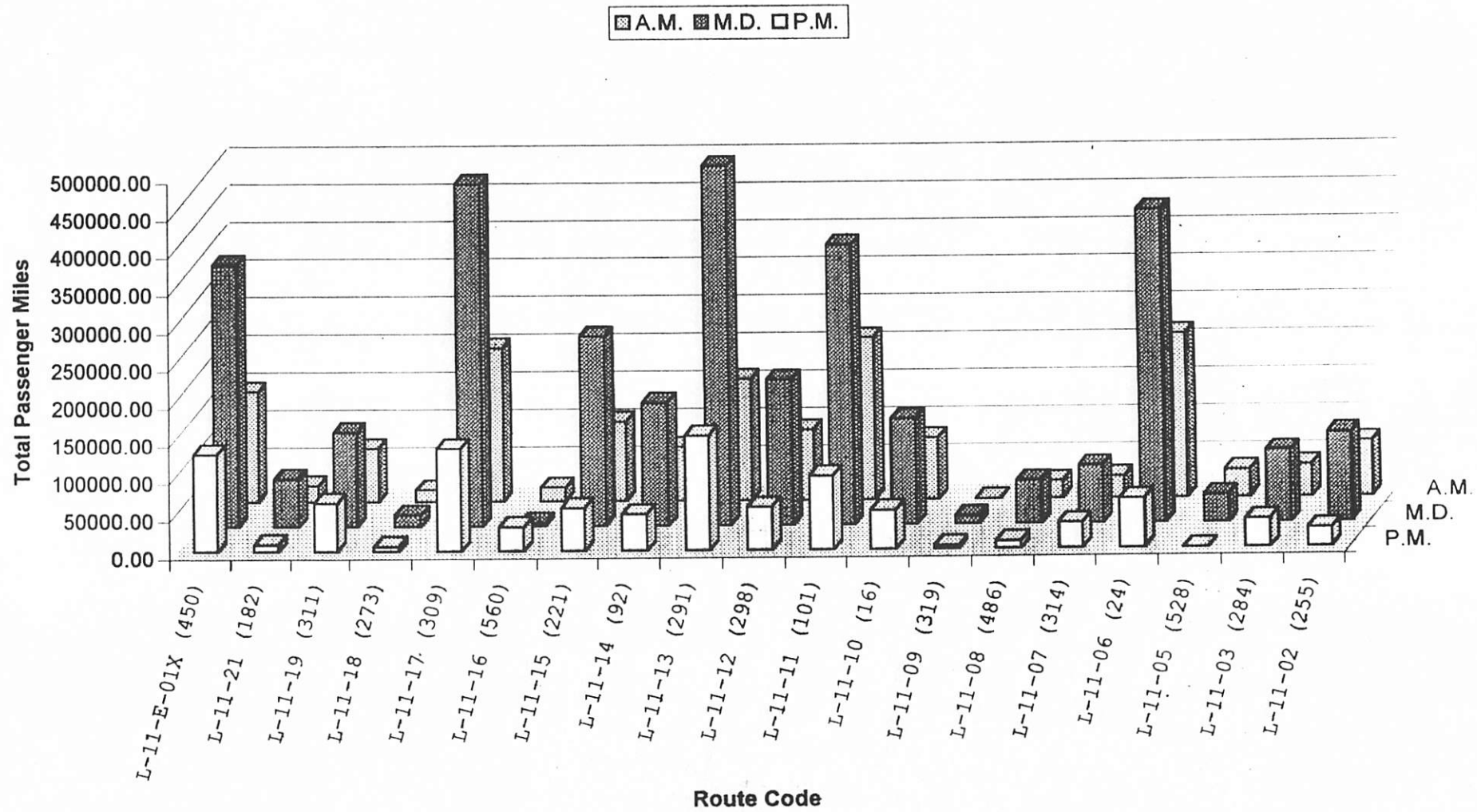
Section 15 Report for SJMR 'público' system by Management & Technical Consulting Group, Inc.

Route (Code)	Route Description	Carriers	Total Passenger Miles a.m.	Total Passenger Miles m.d.	Total Passenger Miles p.m.	Unlinked Passenger Trips a.m. Total	Unlinked Passenger Trips m.d. Total	Unlinked Passenger Trips p.m. Total	Total Vehicle Miles		
									Hours a.m.	Hours m.d.	Hours p.m.
Intercity											
I-II-17 (202)	Bayamón-Cataño	74	331814.10	632016.00	133146.30	85215.0	179550.0	37905.0	2032.05	3847.50	1356.60
I-II-26 (219)	Bayamón-Dorado via La Virgencita	35	381937.05	506203.70	138646.80	54862.5	107445.0	27531.0	2131.80	4077.40	1179.90
I-II-54 (27)	Bayamón-Naranjito	27	49091.25	267449.70	17265.30	10165.0	28595.0	3439.0	403.75	1157.10	146.30
I-II-70 (440)	Bayamón-Parada 18, Parada 15	42	84588.00	108345.60	90310.80	17556.0	22914.0	17926.5	691.60	872.10	759.05
I-II-71 (926)	Bayamón-Toa Alta	2	163285.05	247546.25	37454.70	33867.5	52535.0	7467.0	1332.85	1995.00	319.20
I-II-E-26 (215)	Bayamón-Dorado via Campanilla	45	458280.00	1035215.00	223079.95	41325.0	107397.5	23465.0	256.50	2907.00	631.75
Locals											
L-II-02 (255)	Bayamón-Centro Médico	18	73630.70	118503.00	24904.25	15314.0	25137.0	4940.0	605.15	957.60	209.00
L-II-03 (284)	Bayamón-Cerro Gordo y Royal Town	17	42294.00	94802.40	37186.80	8740.0	20178.0	7372.0	349.60	752.40	311.60
L-II-05 (528)	Bayamón-Bo. Dajao	1	36252.00	36115.20	0.00	7524.0	7676.0	0.0	296.40	288.80	0.00
L-II-06 (24)	Bayamón-Guaraguao via Juan Sanchez	33	218133.30	416128.50	65116.80	30723.0	61987.5	11039.0	977.55	2223.00	452.20
L-II-07 (314)	Bayamón-Hato Tejas	49	28551.30	75848.00	33470.40	5928.0	16112.0	6688.0	233.70	608.00	281.20
L-II-08 (486)	Bayamón-Bo. Nuevo	9	22657.50	56430.00	9960.75	4712.0	11970.0	1976.0	186.20	451.25	84.55
L-II-09 (319)	Bayamón-Pájaros, Candelaria, Covadonga	25	0.00	10533.60	4648.35	0.0	2242.0	921.5	0.00	83.60	38.95
L-II-10 (16)	Bayamón-Palmas, Las Vegas, Cuchillas, Cucharillas	13	81567.00	139946.40	51795.90	16929.0	29744.5	10250.5	666.90	1119.10	432.25
L-II-11 (101)	Bayamón-Sabana Seca, Levittown, Sierra Bayamón	37	215391.60	371549.75	97615.35	48906.0	82032.5	19351.5	2872.80	3500.75	817.95
L-II-12 (298)	Bayamón-Santa Olaya, Buena Vista	18	93279.55	192990.60	56780.55	19389.5	41040.0	11286.0	765.70	1539.00	478.80
L-II-13 (291)	Bayamón-Bo. Piñas, ext La Providencia	33	160968.00	477766.40	152471.20	36480.0	91200.0	30324.0	2036.80	3161.60	1276.80
L-II-14 (92)	Bayamón-River View, Sierra Bayamón	14	71392.50	163179.60	47811.60	25650.0	76066.5	9576.0	826.50	2422.50	410.40
L-II-15 (221)	Bayamón-Lomas Verdes	49	105251.45	251968.50	56444.25	30153.0	73815.0	11143.5	1158.05	2793.00	484.50
L-II-16 (560)	Bayamón-Bo. Minillas, Sec 9,10,11 y 12, Sta. Juanita	12	18240.00	4220.85	31874.40	3990.0	769.5	6327.0	228.00	108.30	267.90
L-II-17 (309)	Bayamón-Santa Juanita, Hospital Regional	76	203917.50	455202.00	136130.25	42579.0	96558.0	26875.5	1692.90	3678.40	1168.50
L-II-18 (273)	Bayamón-Villa Rica, Flamingo y Santa Monica	8	15105.00	15048.00	6640.50	3154.0	3192.0	1311.0	125.40	121.60	57.00
L-II-19 (311)	Bayamón-Sierra Linda y Bayamón Gardens	74	70563.15	125552.00	64083.20	29497.5	65436.0	24320.0	1051.65	2021.60	912.00
L-II-21 (182)	Bayamón-Bucarabones, Villa del Río	8	21147.00	63201.60	9296.70	4370.0	13452.0	1843.0	174.80	501.60	77.90
L-II-E-01X (450)	Bayamón-Rerville	20	146758.85	347808.30	129016.65	30580.5	74071.5	25621.5	1212.20	2818.65	1102.00

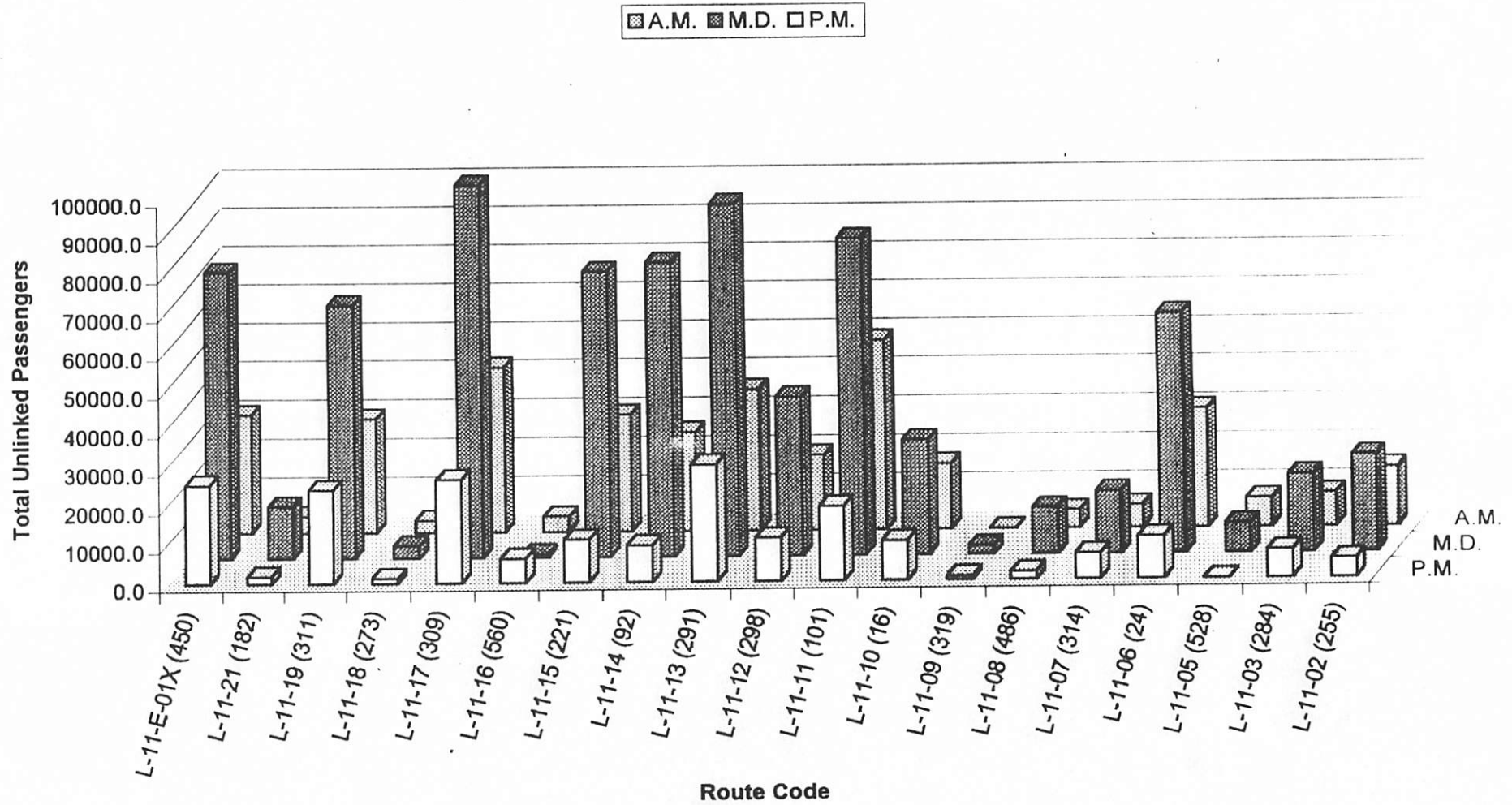
Number of carriers per route



Total passenger miles variability by ruote and time of day

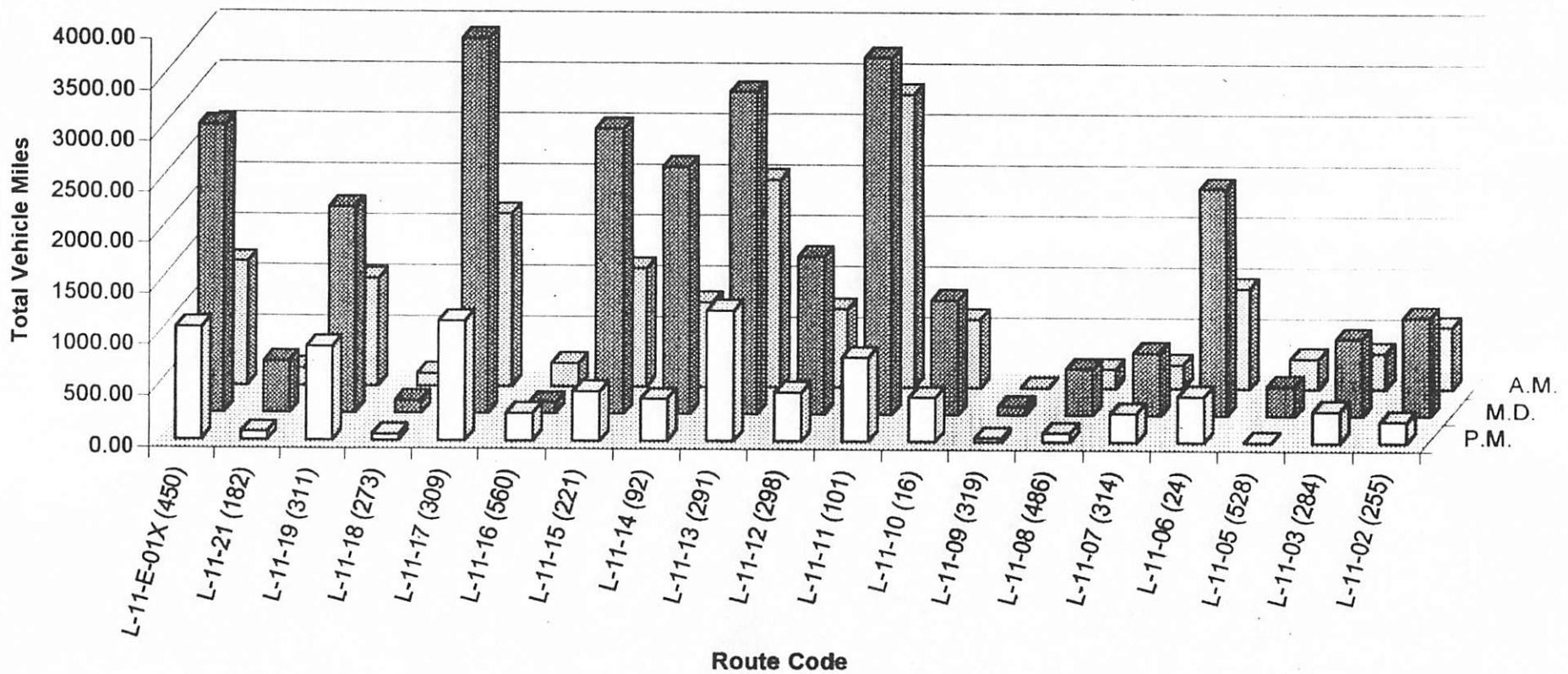


Unlinked passenger trips variability by route and time of day



Total vehicle miles variability by route and time of day

■ A.M. ■ M.D. □ P.M.



Preliminary Conclusions

The conclusions so far are the following:

- Downtown Bayamón is mainly a *service* sector, which relies heavily on access and transportation requirements.
- There is a need to give priority to the transportation requirements, and Tren Urbano will be able to provide an alternative along with the público operators
- PR-167 and PR-2 are the main avenues of Bayamón in which commercial activity is likely to be concentrated. These are the references for the census study.
- Público operators need to organize together in order to attempt effective negotiations with DTPW representatives.
- DTPW representatives must find the funding necessary to upgrade, at least partially the vehicles and recruit younger operators.
- TUO also needs to participate in these negotiations, even though they have no jurisdiction over the público system.
- There are irregularities in the operations in terms of the frequency of service by time of the day and season, which is likely to be caused by the demand.