

**vision42**

**Economic and Fiscal Impacts of Proposed LRT  
Services in a Pedestrianized 42<sup>nd</sup> Street on Retail,  
Restaurants, Hotels & Theatres  
in the 42<sup>nd</sup> Street Corridor**



**Prepared by**

**Urbanomics, Inc.**

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**vision42**  
an auto-free light rail boulevard for 42nd Street

# Phase II Technical Studies— Anticipated Economic Impacts on Retail, Hotels and Theaters

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# **Economic and Fiscal Impacts of Proposed LRT Services in a Pedestrianized 42<sup>nd</sup> Street on Retail, Restaurants, Hotels & Theatres in the 42<sup>nd</sup> Street Corridor**

- 1 Executive Summary**
- 2 The 42<sup>nd</sup> Street Corridor: Existing Conditions**
  - 2.1 Retail & Restaurants**
  - 2.2 Hotels & Theaters in 37<sup>th</sup>-47<sup>th</sup> Street Corridor**
  - 2.3 Pedestrian Activity**
- 3 The Value of LRT Service on 42<sup>nd</sup> Street: Survey Responses**
  - 3.1 Methodologies and Respondent Characteristics**
    - 3.1.1 Retail Surveys
    - 3.1.2 Hotel and Theatre Interviews
    - 3.1.3 Current Locational Concerns
  - 3.2 Benefits: Retail, Restaurant, Hotel, Theater**
  - 3.3 Disbenefits: Retail, Restaurant, Hotel, Theater**
  - 3.4 Proposed Improvements & Suggested Mitigations**
  - 3.5 Overall Anticipated Effect on Business**
- 4 Economic Impacts of LRT Systems Elsewhere: Literature Search & Survey Responses**
  - 4.1 American Cities**
  - 4.2 European Cities**
- 5 Projected Economic Impacts of Vision42**
  - 5.1 Direct Economic Benefits**
    - 5.1.1 Benefits of Increased Pedestrian Traffic on Retail Customers on 42<sup>nd</sup> Street
    - 5.1.2 Benefits of Increased Pedestrian Traffic, Including Tourist Attraction, on Hotel Occupancy on 42<sup>nd</sup> Street
    - 5.1.3 Benefits of Increased Pedestrian Traffic, Including Tourist Attraction, on Theatre Attendance in the 37<sup>th</sup> to 47<sup>th</sup> Streets Corridor
    - 5.1.4 Benefits of Increased Retail Customers on Retail Sales on 42<sup>nd</sup> Street
    - 5.1.5 Benefits of Increased Hotel Occupancy on Room Sales on 42<sup>nd</sup> Street
    - 5.1.6 Benefits of Increased Theater Attendance on Ticket Sales in the 37<sup>th</sup> to 47<sup>th</sup> Streets Corridor
    - 5.1.7 Benefits of Retail Business Expansion on Worker Employment and Earnings
    - 5.1.8 Benefits of Rents and Occupancy Increases on 42<sup>nd</sup> Street Commercial Space
  - 5.2 Direct Economic Costs**
    - 5.2.1 Retail Sales Lost During Construction
    - 5.2.2 Retail Employment Decline During Construction
    - 5.2.3 Increased Cost of Deliveries
  - 5.3 Direct Fiscal Benefits**
    - 5.3.1 Increases in New York City and New York State Tax Revenues
  - 5.4 Cost-Benefit Relationship**

# Chapter 1 Executive Summary

## Introduction

An analysis of the economic and fiscal impacts of LRT service and pedestrianization of 42<sup>nd</sup> Street on retail and entertainment business was undertaken for vision42 from January to October of 2006. This analysis supplements a prior report that dealt primarily with the impacts of vision42 light rail on property value, travel time gains, and tax revenues. The current study addresses the impacts of light rail and pedestrianization on retail, restaurant, hotel and theatres on 42<sup>nd</sup> Street based upon data from state and federal sources, the experience of other LRT systems around the world and, most importantly, survey responses from business owners and managers on 42<sup>nd</sup> Street.

## Existing Conditions on 42<sup>nd</sup> Street

126 active "retail" establishments were identified on 42<sup>nd</sup> Street including 69 purveyors of goods and services, 54 full and limited service restaurants, 2 museums and 1 music store. In addition, 24 vacant retail spaces were identified.

There are 7 hotels with entrances on 42<sup>nd</sup> Street, totaling 3,933 rooms. There are also 16 legitimate theatres, with a total of 6,738 seats, and 2 movie theaters with 8,132 seats.

Pedestrian traffic on 42<sup>nd</sup> Street was estimated under current and future build conditions, yielding an overall increase in pedestrian activity of 35 percent.

## Survey and Interview Results

Surveys were completed with 54 retailers and restaurant owners or managers on 42<sup>nd</sup> Street, for 43 percent response rate. Interviews were held with the general managers of both movie theaters, all five hotels and nine legitimate theatres. Five theatres were located in the 37<sup>th</sup> to 47<sup>th</sup> Streets corridor.

On average, the senior managers of businesses on 42<sup>nd</sup> Street expressed very favorable approval ratings of the vision42 concept. On a scale of 1 to 5, with 5 being the highest, they were: 3.96 for retail establishments, 4.6 for hotels, and 3.4 for theaters.

Average ratings (scale of 1-5, 5 being the highest) of long term positive impacts included:

- Increased pedestrian traffic: 4.6 by retailers, 3.4 by hotels and theatres
- Better transit access: 3.75 by retailers, 3.6 by hotels and theatres
- Streetscaping: 4.1 by hotels and theatres; 3.4 by retailers

Among restaurateurs that responded on 42<sup>nd</sup> Street, 61 percent said they would consider expanding onto sidewalk cafés, as would 3 hotels with restaurants.

Average ratings (scale of 1-5, 5 being most disruptive) of short term negative impacts included:

- Construction disruption: 4.0 by retailers, 2.9 by hotels and theatres
- Eliminated car and taxi access: 3.4 by hotels, 2.59 by retailers

Other Concerns:

- 25 percent of retailers felt that moving delivery truck parking would negatively impact their business.
- 12 percent of retailers felt that relocating trash pickup to receptacles would negatively impact their business.

***After discussing the pros and cons of the plan, 82.9 percent of retail respondents willing to speculate felt that an implemented vision42 plan would increase their business.***

### **Economic Impacts of LRT Systems Elsewhere**

The average increase in retail sales in the central business districts of 22 U. S. cities with light rail lines was 9 percent.

There are positive correlations between changes in ridership and per capita retail and restaurant sales. Some retail areas experience an upgrade in the quality of goods and services offered for sale.

### **Economic and Fiscal Impacts**

The number of retail and restaurant customers is projected to increase from the current 39,000 per day to over 57,000, with average daily customer expenditures projected to increase by 35 percent, from \$3.2 million to \$4.3 million. On an annual basis, with more pedestrian traffic, new retail and restaurant business is anticipated to grow from \$1.1 to \$1.5 billion. (These figures assume no increase in occupancy of currently vacant stores, upon the opening of LRT service.)

42<sup>nd</sup> Street hotels are much in demand and currently near full occupancy. Therefore, the level of their benefits is constrained by their lack of capacity. On an annual basis, the number of guests is expected to increase from 1.87 million to 1.91 million, and the annual room sales from \$323.7 million to \$329.4 million.

Given the anticipated increases in ticket sales with full pedestrianization and LRT service, the 2 cinemas and 15 legitimate theatres directly on 42<sup>nd</sup> Street foresee a 3 percent rise in business from \$200 million to \$204 million annually. The larger, 37<sup>th</sup> to 47<sup>th</sup> Street district, with 50 legitimate theatres, is expected to capture a smaller increase of 1.5 percent in ticket sales, or an additional \$8 million annually (assuming no increase in ticket prices.) Several theatre managers noted that the pedestrian space on 42<sup>nd</sup> Street would offer opportunities for kiosks promoting shows.

The vision42 project is expected to generate \$28.4 million in additional tax revenue annually from the benefits to the retail, restaurant, hotel and theatre businesses — \$17 million to NYC and \$11.4 million to NYS. A one-time loss of \$5.3 million would result from the impact of construction on business sales.

### **Cost-Benefit Analysis**

In the first year of operation, the annual value of direct net benefits accruing to retail shops, hotels, theatres and state and local government is estimated to be limited to \$358 million, due to the disruption of the construction phase. In subsequent years, upon full operation of the LRT system, the positive net benefit is estimated to be \$483 million annually. These benefits supplement those fiscal and economic benefits estimated previously, based upon the positive returns to travelers, residents and office workers in the 42<sup>nd</sup> Street corridor.

## 2. The 42<sup>nd</sup> Street Corridor: Existing Conditions

In order to estimate the impacts of the proposed light rail service and pedestrian street, the existing business conditions of 42<sup>nd</sup> Street and the surrounding area must be assessed. To this end, an inventory was performed of all retail and restaurants businesses on 42<sup>nd</sup> Street, as well as destination businesses such as hotels and legitimate theaters both on 42<sup>nd</sup> Street and in the five blocks north and south of 42<sup>nd</sup>.

### 2.1 Retail and Restaurants

A census of ground floor retail establishments and restaurants on 42<sup>nd</sup> Street was performed on January 10, 2006. The entire length of the street was walked and, with the aid of a series of maps of commercial entrances that had been prepared for the Phase 1 Economic Impact Study, worksheets were filled out for each retail, restaurant and entertainment venue on 42<sup>nd</sup> Street. Along with business name and type, manager name, phone, hours of operation, and delivery entrance were established when possible. Every effort was made not to interfere with the operation of the business and thus maintain a good relationship for the complete survey. An effort was also made to obtain the name and contact number for the owner/manager of each property.

**Map 2.1**  
**Street Census Identified Retail Establishments**



**vision42 Street Census Retail ID**

- ◆ Retail ID

The street survey identified 126 active "retail" establishments, including 54 restaurants, both limited and full-service, 69 purveyors of other goods and services, 2 museums and a music venue. In addition, 24 vacant properties were identified.

## **Retail/Restaurant Space Occupied and Vacant Square Footage and Rents**

A comparative analysis of the NYC Department of City Planning's 2005 PLUTO data was performed for the tax lots in blocks on 42<sup>nd</sup> Street. Data from the street surveys and other sources was incorporated in an effort to ascertain the full scope of the ground floor retail space affected by the vision42 proposal. The PLUTO data include all retail space per lot, regardless of number of floors of retail. Thus in instances in which the retail space exceeded the lot size, the lot area was used in its place and was then divided by the observed number of ground floor retail uses to produce an average size per lot.

The analysis also uncovered several tax lots on 42<sup>nd</sup> Street for which no data were included in the PLUTO files but in which retail activity had been observed during the field surveys. In notable cases, these lots were home to well-known buildings including Grand Central Terminal, the Met Life and Verizon Buildings as well as the Port Authority Bus Terminal. Most of these edifices house considerable retail space. In these instances, outside sources were checked for overall retail square footage and public listings were used to count the number of retail and restaurant spaces in each facility. The retail square footage was then divided by the total number of establishments to determine an average size, which was applied to the number of observed ground floor retail and restaurant uses.

The total retail space on 42<sup>nd</sup> Street **tax blocks** is estimated at 1.99 million square feet split between retail and restaurant uses (1.4 million sf and 0.675 million sf, respectively). The tax block totals were divided by the number of observed establishments to provide a block average. These averages were applied to the actual storefront count as observed in the street census.<sup>1</sup> Thus, actual storefronts on 42<sup>nd</sup> Street total an estimated 756,986 square feet, split 2:1 between retail and restaurant uses as shown in the following table.

**Table 2.1**  
**42<sup>nd</sup> Street Occupied Retail Space**

<b>Avenue Boundary</b>	<b>Total Retail and Restaurant Space (sf)</b>	<b>Retail Only (sf)</b>	<b>Restaurant/Restaurants Only (sf)</b>
<b>All of 42<sup>nd</sup> St</b>	<b>756,986</b>	<b>489,389</b>	<b>267,598</b>
1 <sup>st</sup> to 2 <sup>nd</sup>	5,180	2,383	2,797
2 <sup>nd</sup> to 3 <sup>rd</sup>	61,740	33,319	28,420
3 <sup>rd</sup> to Lexington	70,780	53,085	17,695
Lexington to Grand Central	86,125	58,420	27,705
Grand Central to 5 <sup>th</sup>	48,137	33,482	14,655
5 <sup>th</sup> to 6 <sup>th</sup>	58,954	37,569	21,385
6 <sup>th</sup> to 7 <sup>th</sup>	53,253	48,882	4,371
7 <sup>th</sup> to 8 <sup>th</sup>	157,608	97,590	60,018
8 <sup>th</sup> to 9 <sup>th</sup>	57,178	30,097	27,081
9 <sup>th</sup> to 10 <sup>th</sup>	20,712	9,487	11,225
10 <sup>th</sup> to 11 <sup>th</sup>	92,437	53,547	38,890
11 <sup>th</sup> to 12 <sup>th</sup>	44,882	31,526	13,356

Source: PLUTO data and Urbanomics

<sup>1</sup> Estimates were prepared on a block by block basis, to preserve the privacy of the establishments. For ease of discussion, the north and south sides of 42<sup>nd</sup> Street between Avenue blocks were aggregated.

## **Rents of Occupied Space**

Most of the retail establishments on 42<sup>nd</sup> Street have long term leases and have been located in their current spaces for several years. Central sources of real estate data focus on current asking rents, and while they do keep some information on existing rents in the 42<sup>nd</sup> Street corridor, it is very generalized and includes portions of the avenues as well, skewing the data. Thus, the rent responses from the street surveys were average for each block with the results following in Table 2.2.

To ascertain the current income generated by retail rents, the average rental rate of the block was applied to the estimated net square footage of occupied existing retail space.

**Table 2.2**  
**42<sup>nd</sup> Street Retail Annual Rent per Square Foot in Existing Leases**

<b>Avenue Boundary</b>	<b>Rent per square foot</b>	<b>Current Estimated Aggregate Rent per Block</b>
<b>42<sup>nd</sup> Street</b>		<b>\$95,191,085</b>
1 <sup>st</sup> to 2 <sup>nd</sup>	\$100	\$414,384
2 <sup>nd</sup> to 3 <sup>rd</sup>	\$75	\$3,410,450
3 <sup>rd</sup> to Lexington	\$200	\$11,324,834
Lexington to Grand Central	\$220	\$12,690,367
Grand Central to 5 <sup>th</sup>	\$200	\$6,572,340
5 <sup>th</sup> to 6 <sup>th</sup>	\$200	\$8,860,160
6 <sup>th</sup> to 7 <sup>th</sup>	\$200	\$7,121,811
7 <sup>th</sup> to 8 <sup>th</sup>	\$250	\$28,296,267
8 <sup>th</sup> to 9 <sup>th</sup>	\$250	\$7,623,729
9 <sup>th</sup> to 10 <sup>th</sup>	\$125	\$2,071,221
10 <sup>th</sup> to 11 <sup>th</sup>	\$75	\$5,106,534
11 <sup>th</sup> to 12 <sup>th</sup>	\$75	\$1,698,990

Source: Retail Surveys and Urbanomics

Based upon this estimate, currently \$95.2 million per year is collected in retail rents for 42<sup>nd</sup> Street spaces.

## **Vacant Space and Asking Rents**

Using the same average space methodology as above, the current vacant space totaled roughly 90,000 sf.<sup>2</sup> Property Owners, Managers and Agents were called for additional information on the actual size and asking rents of the 24 vacant properties on 42<sup>nd</sup> Street. Responses were sporadic.

The Costar Property database was consulted as well. According to the CoStar retail property database, nineteen retail spaces are available on 42<sup>nd</sup> Street as of mid-August 2006. They range in size from 3,000 to 60,000 square feet with asking rents from \$45 to \$93 psf. About one third of the available spaces had rents listed as negotiable. Three spaces located at 605 W. 42<sup>nd</sup> are available at an asking rent of \$70psf. These listed asking rents are substantially lower than the

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<sup>2</sup> Given the amount of new construction on 42<sup>nd</sup> St. including the large residential buildings between 11<sup>th</sup> and 12<sup>th</sup> as well as 1 Bryant Park among others, there will be a great deal more ground floor retail in the near future.

rents identified by the Cushman and Wakefield broker, property agents, as well as the respondents to the survey of retail establishments.

An overview of current asking rents per square foot on 42<sup>nd</sup> Street was obtained from Cushman and Wakefield and other real estate sources.

**Table 2.3**  
**42<sup>nd</sup> Street Retail Asking Annual Rent per Square Foot**

<b>Avenue Boundary</b>	<b>Rent per square foot</b>
1 <sup>st</sup> to 2 <sup>nd</sup>	\$100
2 <sup>nd</sup> to 3 <sup>rd</sup>	\$125
3 <sup>rd</sup> to Lexington	\$200-225
Lexington to Grand Central	\$250
Grand Central to 5 <sup>th</sup>	\$300-350
5 <sup>th</sup> to 6 <sup>th</sup>	\$300
6 <sup>th</sup> to 7 <sup>th</sup>	\$330-350
7 <sup>th</sup> to 8 <sup>th</sup>	\$350-400
8 <sup>th</sup> to 9 <sup>th</sup>	\$200-250
9 <sup>th</sup> to 10 <sup>th</sup>	\$125-150
10 <sup>th</sup> to 12 <sup>th</sup>	\$100-125

Source: Cushman and Wakefield

Potential rents from the existing vacant spaces, were they to be rented at current average rates amount to \$16,083,417 on a gross basis, or \$12,866,733 assuming net at 80 percent of gross.<sup>3</sup>

### **Annual Sales and Employment**

Initial sales and employment figures for individual retail businesses were obtained from the **Reference USA** database at the New York Public Library's Science Industry and Business Research Library. For those businesses not listed therein, sales and employment were imputed using the averages by business type by zip code in the study area from the **2002 Census of Retail Trade**. Sales and employment were aggregated on a block by block basis.

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<sup>3</sup> Since the time of the initial street survey, 2 of the vacant spaces have rented, including the retail space at 7 Times Square, vacant for 2 years, that was just leased to Ann Taylor at a rate of \$425 psf.

**Chart 2.1  
Aggregate Sales and Employment by Block**

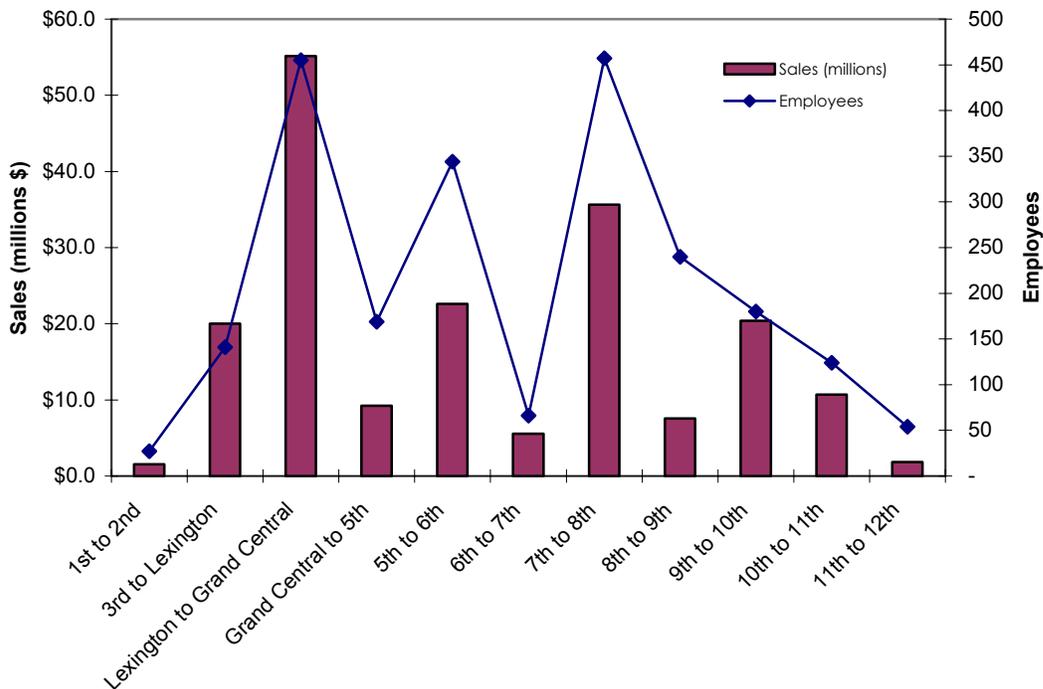


Chart 2.1 above illustrates the relationship between sales and employment on a block by block basis. The 2<sup>nd</sup> Avenue to 3<sup>rd</sup> Avenue segment was excluded from the chart because it contains a travel agency whose sales are outlying in the extreme and make legible plotting difficult.

**Vacant Stores**

Were vacant storefronts to be rented, and sales and employment preserved at the current averages per block, the potential exists for an additional \$27.8 million in annual retail sales and a total of 338 new jobs.

**2.2 Hotels & Theaters in 37<sup>th</sup>-47<sup>th</sup> Street Corridor**

**On 42<sup>nd</sup> Street**

**Hotels**

Seven hotels with a total of 3,933 rooms have entrances on 42<sup>nd</sup> Street. They range in size from 50 rooms to 1,336 and average 562. Three of these hotels, the Grand Hyatt (1,336 rooms), Crowne Plaza UN (300 rooms) and the New York Helmsley (780 rooms), are located east of 5<sup>th</sup> Avenue. The average size of East 42<sup>nd</sup> Street hotels is 805 rooms. Despite being more numerous, the West 42<sup>nd</sup> Street hotels are smaller, averaging only 379 rooms. The hotels west of 5<sup>th</sup> Avenue include the Hilton Times Square (444 rooms); the Travel Inn (160 rooms); the tourist class Elk Inn (50 rooms); and the largest, the Westin Times Square (863 rooms), whose primary entrance is on 43<sup>rd</sup> Street.

Additionally, the old Knickerbocker Hotel on the SW corner of 42<sup>nd</sup> and Broadway, which has been used retail and office space since 1921, was purchased in 2006 by Istithmar, the investment company of the royal family of Dubai. The company plans to restore the building to an upscale hotel, adding 250 to 300 rooms to 42<sup>nd</sup> Street's hotel stock.

## **Theatres**

There are 16 legitimate theatres on 42<sup>nd</sup> Street with a total of 6,738 seats. Three of the theatres, the Hilton, New Amsterdam and American Airlines, are classified as "Broadway" theatres based upon house sizes of at least 700 seats. They have 1,813, 1,747 and 740 seats respectively. The remaining 13 consist of seven Off-Broadway houses (between 100 and 699 seats) and six Off-Off Broadway theatres of fewer than 100 seats each. The Off-Broadway houses include the New Victory (540), Little Schubert (499), Duke on 42<sup>nd</sup> Street, Acorn, Playwrights Horizons Mainstage, Signature at Peter Norton Space and Playwrights Horizons Peter J Sharp (128). The two Playwrights Horizons stages are located within the same building, just as the Acorn theatre is located within the Theatre Row Complex with five of the six Off-off Broadway houses on 42<sup>nd</sup> Street: the Beckett (99), Clurman (99), Kirk (99), Lion (88) and Theatre Row Studio (55). The only East 42<sup>nd</sup> Street stage is the Chashama experimental theatre (74 seats).

## **Movie Theaters**

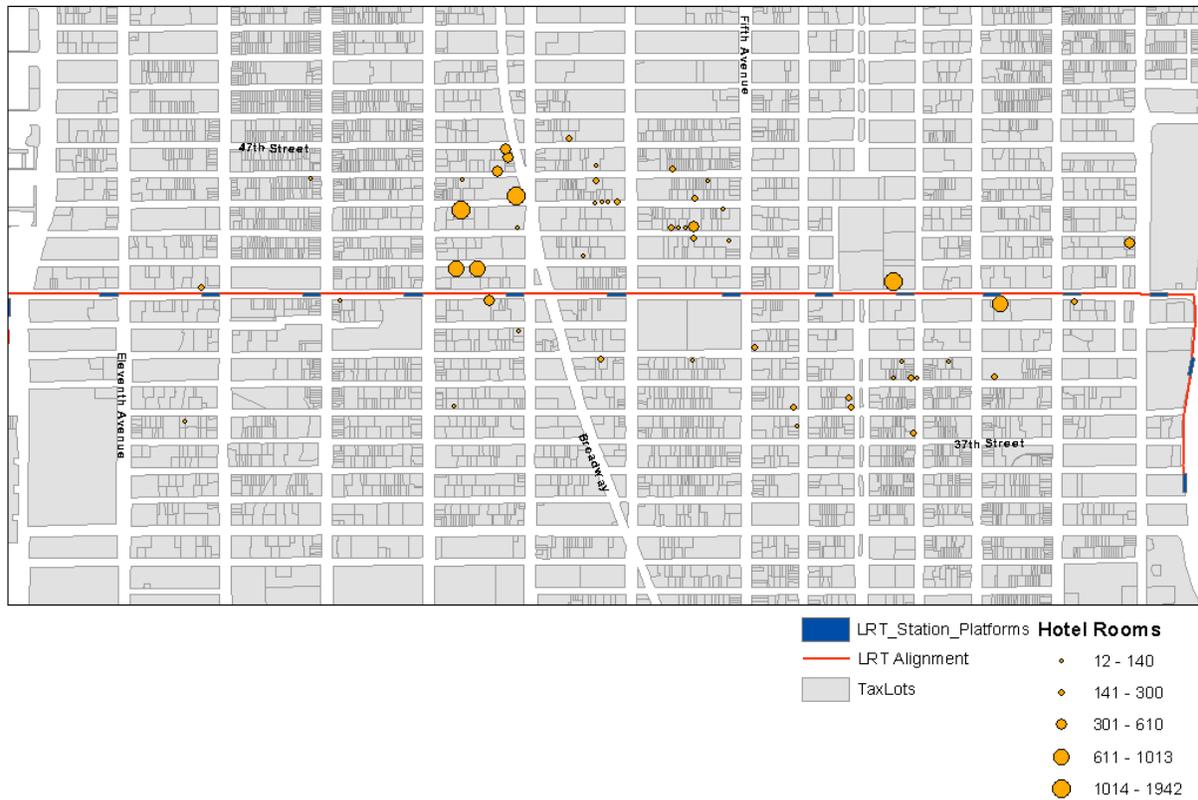
There are two movie theaters located on 42<sup>nd</sup> Street. The AMC Empire 25 is located on the south side of 42<sup>nd</sup> Street between 7<sup>th</sup> and 8<sup>th</sup> Avenues and has 25 screens with a total of 4,916 seats. The AMC E-Walk 13 is located on the north side of 42<sup>nd</sup> Street between 7<sup>th</sup> and 8<sup>th</sup> Avenues and has thirteen screens and 3,216 seats.

## **Affected Hotels and Theatres in the area Between 37<sup>th</sup> and 47<sup>th</sup>**

### **Hotels**

There are 54 additional hotels in the expanded study area of 37<sup>th</sup> to 47<sup>th</sup> Streets. Of these hotels, only 51 were willing to share the number of rooms they had. There are 13,021 rooms in 51 hotels and the number of rooms per hotel ranged from 12 to 1,942, with an average size of 255.

## Map 2.2 Hotels by Number of Rooms in Relation to LRT Platforms



Thirty-four of the hotels were west of 5<sup>th</sup> Avenue with the total number of rooms reaching 8,810.<sup>4</sup> The average size of the Westside hotels was 275. Fewer and smaller than their Westside counterparts, twenty of the hotels were east of 5<sup>th</sup> Avenue, ranging in size from 60 to 1,013 rooms<sup>5</sup>. The average size is 222 rooms per eastside hotel.

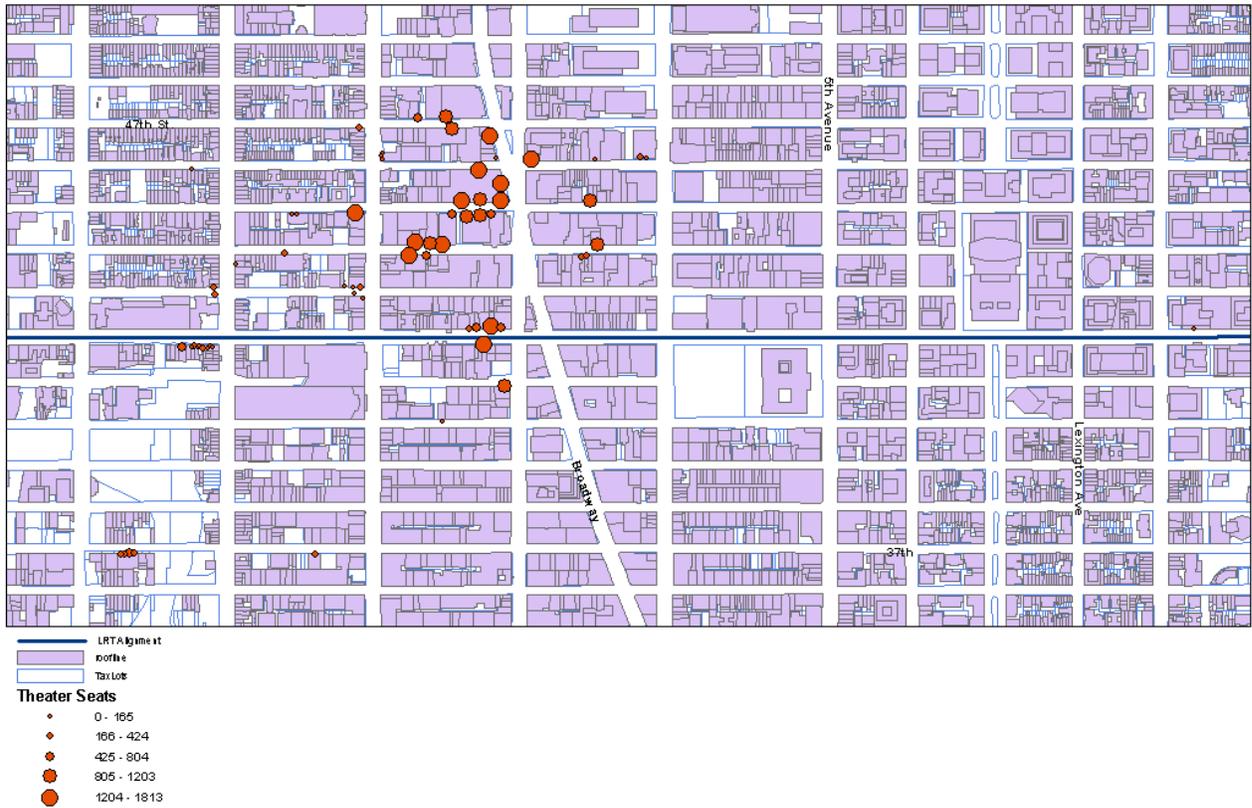
<sup>4</sup> Numbers of rooms were available for only 32 of the 34 west side hotels.

<sup>5</sup> Numbers of rooms were available for only 19 of the 20 east side hotels.

## Theatres

In the area stretching from 37<sup>th</sup> to 47<sup>th</sup> Street, there are an additional 23 Broadway theatres with a total of 27,931 seats and another 28 Off- and Off-off Broadway theaters with 5,032 seats in total<sup>6</sup>.

**Map 2.3**  
**Legitimate Theatres in Relation to Proposed LRT Alignment**



<sup>6</sup> This total does not take two houses into account. The Producers Club @ Times Square Arts Center was still under construction when this report was produced and the number of seats was as yet undetermined. Storm Theatre Company did not return calls asking for information.

Several of the theatres are owned by single organizations. Table 2.4 lists the number of seats controlled by each owner.

**Table 2.4:  
Area Theatre Seats by Owner**

Owner	Seats	Percent of Total
	39,701	
The Shubert Organization	13,935	35.1%
The Nederlander Organization	10,188	25.7%
Jujamcyn Theaters	3,060	7.7%
Clear Channel and Hilton Hotels Corp	1,813	4.6%
Disney Theatrical	1,747	4.4%
Roundabout Theatre Company	1,239	3.1%
W. 37th Street Group	1,188	3.0%
New 42nd Street	740	1.9%
Manhattan Theatre Club	650	1.6%
Theatre Row Org	639	1.6%
Marty Markinson	597	1.5%
Lamb's Theatre Org/Lamb's Church of the Nazarene	549	1.4%
Reno Productions Incorporated	548	1.4%
Producers Club	399	1.0%
Playwrights Horizons Organization	326	0.8%
Second Stage Organization	296	0.7%
Mikhail Barishnikov Foundation	296	0.7%
Zipper Theatre	199	0.5%
Puerto Rican Traveling Theatre Company	196	0.5%
Mint Theater Org	178	0.4%
Just Sold	165	0.4%
Signature Theatre Org	160	0.4%
St Clements Church	151	0.4%
Primary Stages	146	0.4%
The Theatre-Studio, Inc	132	0.3%
Chashama Organization	74	0.2%
Broken Watch Theatre Company	50	0.1%
Drama Book Shop	40	0.1%

### 2.3 Pedestrian Activity

Pedestrian counts of 42<sup>nd</sup> Street prepared for a number of recent major environmental impact statements were collected and aggregated. These counts were available only for specific spots along 42<sup>nd</sup> Street and frequently were counts of the Avenues instead of 42<sup>nd</sup> Street itself. Thus, in order to ascertain the current and projected number of pedestrians on **each** block of 42<sup>nd</sup> Street at any given time, a relational equation was used and checked against the actual spot counts.

## **Projected Pedestrian Impacts of the Light Rail and Auto-Free 42<sup>nd</sup> Street**

Assuming the proposed auto-free light rail will be built, the projected number of pedestrians can be estimated using equations developed by Boris S. Pushkarev and Jeffrey M. Zupan for the Regional Plan Association in "Urban Space for Pedestrians," their study of midtown Manhattan in 1976<sup>7</sup>.

### **Equations Relating the Presence of Pedestrians to Building Use and Walkway Space**

(Source: RPA)

Streets, midday

$$P = 3.12 \text{ walkway} + 0.06 \text{ office} + 0.12 \text{ retail} + 0.74 \text{ restaurant} - 4.01$$

Streets, evening

$$P = 3.17 \text{ walkway} + 0.04 \text{ office} + \frac{46.12}{D^3} + 2.17$$

Where:

$P$  = number of pedestrians at an instant in time on the sidewalks, plazas, and in the vehicular roadway of a block sector.

Walkway = sidewalk and plaza space the block sector, in thousands of square feet

Office, retail, restaurant = gross office, retail and restaurant floor space, respectively, in the block sector, in thousands of square feet

$D$  = distance from the centroid of the sidewalk and plaza space to the nearest transit entrance, in hundreds of square feet.

As is obvious from the equations, the amount of free walkway, or sidewalk, space has the greatest multiplier and thus the greatest impact on the number of pedestrians in any given area. The validity of these equations was tested by comparing recent counts from major EISs to the formulaic results under current conditions, adjusted by density and flow to reflect an hourly count estimate.

**Table 2.5  
Comparison of Pedestrian Counts and Derived Results**

<b>Location</b>	<b>Average Hourly</b>	<b>Evening Count</b>	<b>Midday Derived</b>	<b>Evening Derived</b>	<b>Midday Diff.</b>	<b>Evening Diff.</b>
*North side between 7 <sup>th</sup> and 8th	2,921		3,029	2,046	3.6%	
*South side between 7 <sup>th</sup> and 8th	4,224		3,996	2,390	-5.4%	
North side Park and 42 <sup>nd</sup> Crosswalk**		4,076		4,304		5.6
South Side between 6 <sup>th</sup> and 7 <sup>th</sup> ***		2,751		3,657		32.9

\*Hourly Average of Times Square BID counts performed Winter 2005 by Philip Habib and Assoc.

\*\*Hourly Average of 2003 Grand Central Partnership Count

\*\*\*Hourly Average 2002

<sup>7</sup> Due to the almost full buildout of midtown Manhattan, pedestrian and traffic conditions have not changed significantly in the past 30 years.

The differentials between the 7<sup>th</sup> and 8<sup>th</sup> Avenue segments were quite acceptable. Those differences between the derived results and the other two counts are slightly less so. However when recent construction has been taken into account, the results are quite plausible.

After equations were run under existing conditions, the street segment data were altered to reflect the expanded pedestrian space and increased proximity to transit stops provided under the vision42 plan. The overall average increase in pedestrian traffic generated by the implementation of the vision42 plan is 31 percent at midday and 45 percent in the evening. The following map shows the midday percent increase per segment of 42<sup>nd</sup> Street.

**Map 2.4**  
**Pedestrian Generation of vision42 Plan Implementation: Midday**



**vision42:**  
**Pedestrian Generation of**  
**Pedestrianization and LRT**

**Percent Change Midday**

- 15.3% - 21.8%
- 21.9% - 32.9%
- 33.0% - 50.4%
- 50.5% - 73.7%
- 73.8% - 90.8%

As seen above, areas with the greatest projected increases in pedestrian traffic (73.8% to 90.8%) would be the far west side, on the south side of the street on each segment from 10<sup>th</sup> to 12<sup>th</sup> Avenues, as well as on the north side of the 10<sup>th</sup> to 11<sup>th</sup> Avenue segment. The next highest increases (50.5 to 73.7%) will be on the north side of 42<sup>nd</sup> Street from 8<sup>th</sup> to 9<sup>th</sup> Avenues and 11<sup>th</sup> to 12<sup>th</sup> and on the south side from 1<sup>st</sup> to 2<sup>nd</sup> and from 5<sup>th</sup> to 6<sup>th</sup>. Increases between 33 and 50.4 percent will take place on the north side of 42<sup>nd</sup> Street from 10<sup>th</sup> to 11<sup>th</sup> and from 1<sup>st</sup> to 2<sup>nd</sup>, and on the south side from 8<sup>th</sup> to 9<sup>th</sup>. The remaining, more central areas with already-convenient access to transit will still increase from 15.3% to 32.9%.

The changes in pedestrian trip generation by street segment during the evening hours are even more pronounced because the equations for evening are influenced by the distance from the block midpoint to the nearest train stop. The map follows.

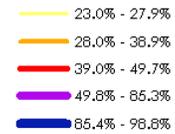
## Map 2.5 Pedestrian Generation of *vision42* Plan Implementation: Evening



Forecasted Effects of *vision42* Proposal Implementation  
Evening Increase in Pedestrian Traffic

### Legend

#### Pedestrian Traffic Change



As mentioned previously, the forecasted increase in evening pedestrians is even more pronounced than the midday increase, with the lowest range being between 23 and 27.9 percent and the highest range of increase being between 85.4 and 98.8 percent. The levels of greatest to lowest forecasted increase follow the same patterns. The greatest increases occur on the far West and East sides where there is currently relatively little transportation access and the lowest occur near Grand Central Terminal where transportation access is at its zenith.

The ramifications of the forecasted pedestrian increases on retail business are discussed in Chapter 5.

## 3 42<sup>nd</sup> Street Surveys

In an effort to ascertain the current level of service on 42<sup>nd</sup> Street, and to reach out to business owners to both inform them of the **vision42** proposal as well as acquire their opinions, a standardized survey was undertaken. A similar effort was launched to elicit the opinions of hotel and theatre managers.

The methodologies of survey research are described, followed by an overview of responses and reactions to key common issues from all respondents: retail, hotel and theatre.

### 3.1 Methodologies and Respondent Characteristics

The methodologies for each survey instrument are presented along with the characteristics of respondents by category.

#### 3.1.1 Retail Surveys

In a preliminary outreach, the survey forms accompanied by letters of introduction from the Business Improvement District (BID) and **vision42** were distributed to Bryant Park retailers in April 2006. Many managers seemed pleased and relieved that someone was asking their opinion. However, in the follow-up process in which the managers were called to set up an appointment, only one interview was scheduled despite repeated calls.

On May 4<sup>th</sup>, surveys were distributed on the east side of 42<sup>nd</sup> Street. Several different tactics were employed to improve the response rate received in the Bryant Park BID outreach. The most effective approach taken was to schedule a time to return and administer the survey with the owner/manager when the surveys were initially dropped off. Upon returning, it was discovered that several owners/managers had already completed the survey without having seen the presentation. In order to prevent common misconceptions from influencing the survey results, if owners completed the survey unaided and without a presentation, a "Frequently Asked Questions" (FAQ) sheet was prepared covering issues such as utility disruption, sidewalk/crosswalk blockage, garbage collection, and the like.

Interns distributed surveys to the remaining stores and followed up with unresponsive stores by presenting new copies of the survey as well as the "FAQ" sheet. The survey effort was concluded by June 15<sup>th</sup>.

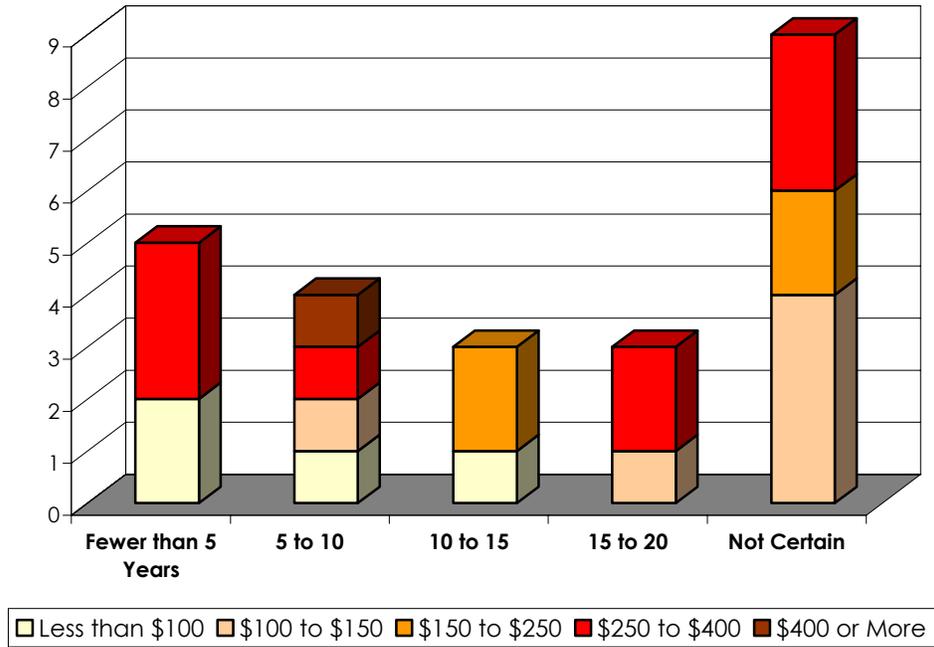
Completed survey responses were received from 54 of 126 retail shops and restaurants on 42<sup>nd</sup> Street. Of the 54 persons interviewed, 10 were owners, 38 were managers, and the remaining 6 held other titles such as director of operations, retail coordinator, or the like..

The survey questionnaire, "FAQ" sheet and database of completed responses are included as Appendix A.

#### **Characteristics of Retail Respondents**

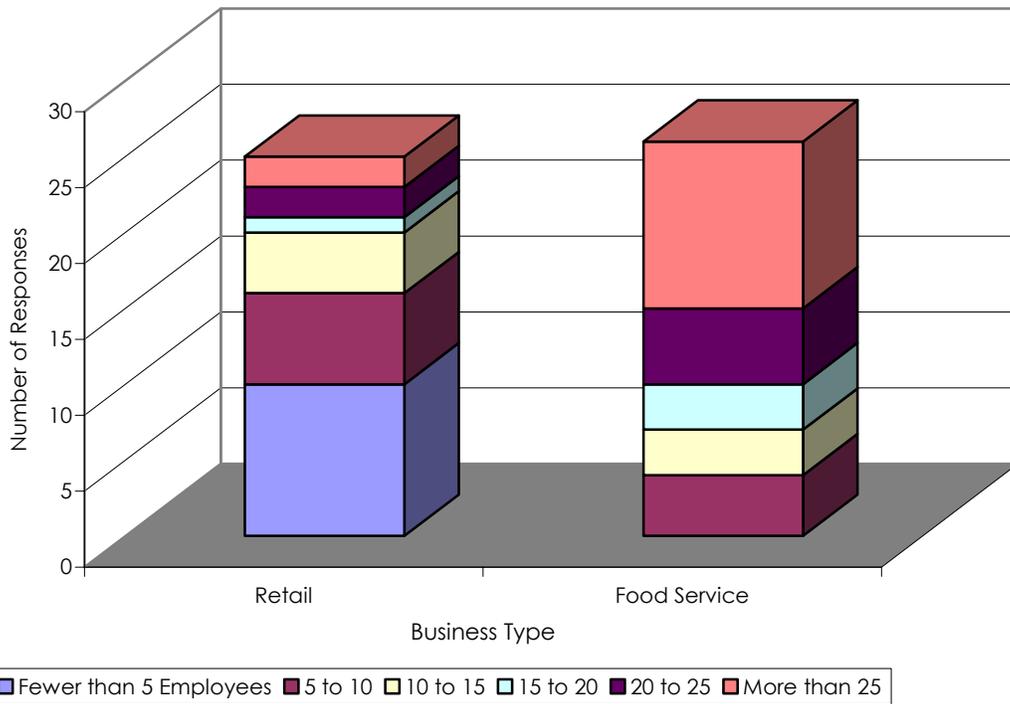
Ninety-eight percent of the respondents lease space. Only one restaurant owns the building in which it is located. The average number of years at each location was 8.4 years, with one establishment indicating it had been in the same location for 42 years.

**Chart 3.1**  
**Retail Survey Respondents Years in Location by Annual Rent PSF**



Of the 24 lessees that were willing or able to say how much they pay for rent, 37.5 percent indicated they paid between \$250 and \$400 per square foot (psf) each year. Another 25 percent pay between \$100 and \$150 psf, 17 percent pay between \$150 and \$250 psf, and 17 percent pay less than \$100 psf. The few remaining retail establishments pay more than \$400 psf.

**Chart 3.2**  
**Retail Survey Respondents Business Type by Number of Employees**

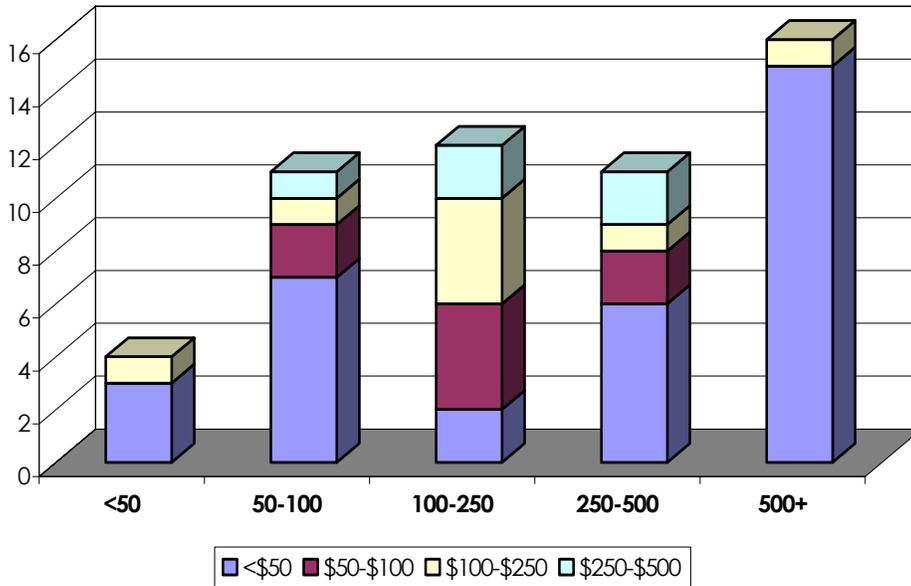


The average number of employees for all retail and restaurant establishments is 20.3. Among restaurants, the number of employees<sup>1</sup> averages 29.1, while among retail stores the average number of employees is 9.4.

Sixteen of the establishments estimate they have more than 500 customers per day. Twelve (12) estimate they have between 100 and 250, while 11 each estimate they have between 50 and 100 or 250 to 500 customers per day. Four establishments report they have fewer than 50 customers per day. Restaurants were more likely to have higher numbers of customers, the majority reporting more than 500 per day. Retail shops reported a much lower patronage, or between 100 and 250 shoppers per day.

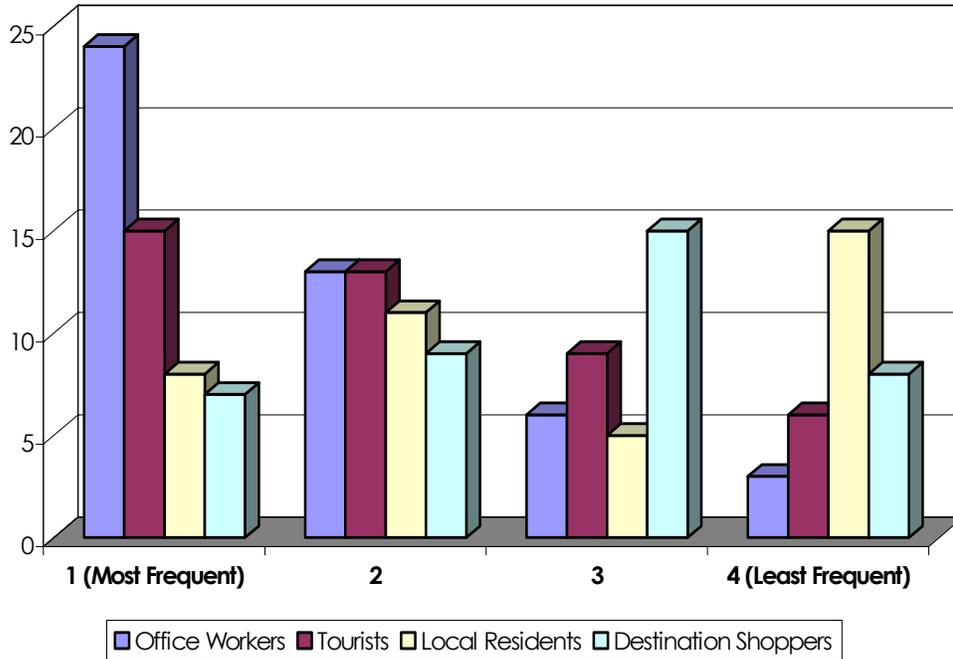
<sup>1</sup> Averages are for respondents only.

**Chart 3.3**  
**Retail Survey Respondents Number of Customers by Average Expenditure**



The largest segments of both retail and restaurant businesses (38.5% and 82.1% respectively) report their customers spend an average of less than \$50 per visit. Additionally, 46 percent of all respondents said that business dropped off at night and on weekends. Restaurants estimated that business slowed by an average of 42.3 percent, while retail shops experienced a 46.9 percent fall-off in evening and weekend sales.

**Chart 3.4**  
**Retail Survey Respondents Customer Types Ranked by Frequency of Visits**



The majority of respondents, both retail and restaurant, estimate their customers are primarily office workers from the surrounding buildings, followed by tourists, local residents and lastly, destination shoppers.

### 3.1.2 Hotels and Theatre Interviews

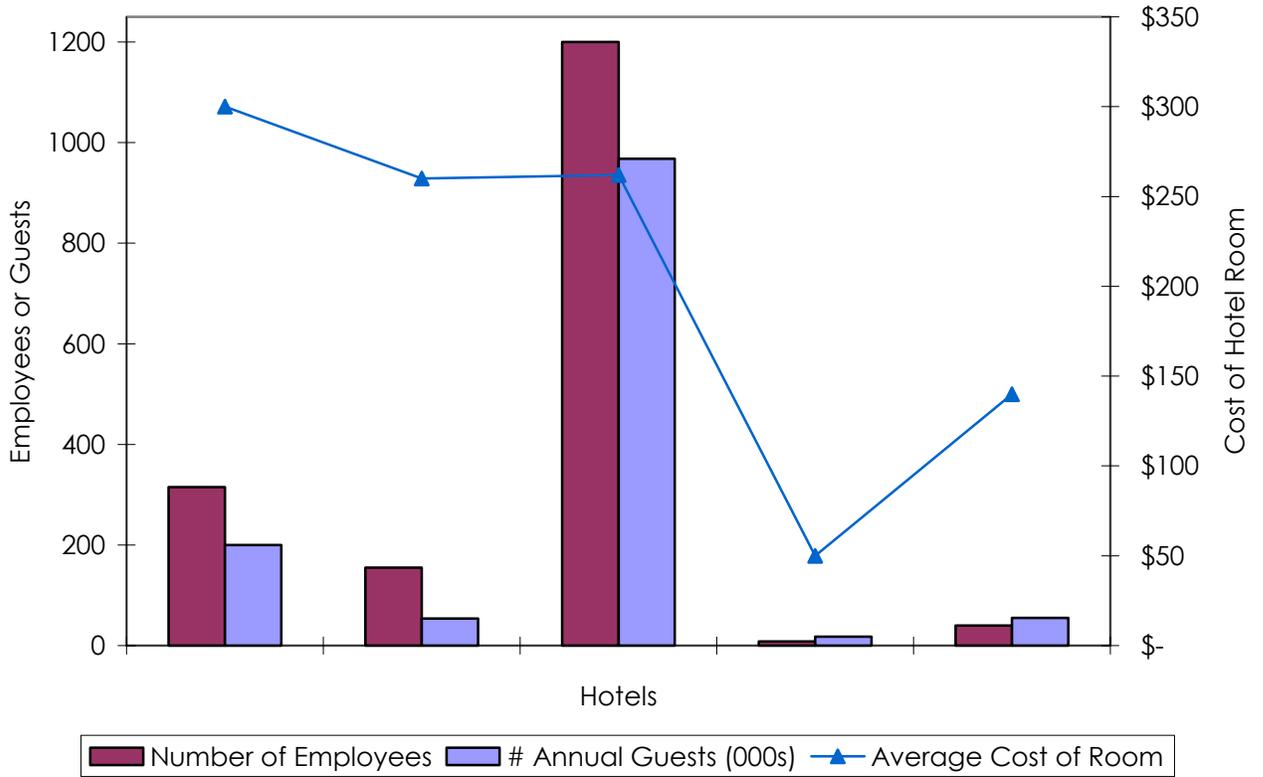
A selection of hotel and theatre managers in the 42<sup>nd</sup> street area were interviewed regarding their views on the probable effects of the vision42 project. A total of 16 organizations were interviewed, including 5 hotels on 42<sup>nd</sup> Street, 4 legitimate theatres on 42<sup>nd</sup> Street, 2 movie theaters on 42<sup>nd</sup> Street, and 5 legitimate theatres near 42<sup>nd</sup> Street, between 37<sup>th</sup> and 47<sup>th</sup> Streets. Four of the 5 hotels interviewed had restaurants on the premises. The interviews took place during June and July 2006. No individual responses are revealed in this report. The results are aggregated as appropriate for the analysis, reflecting only the views of the 16 organizations interviewed.

The hotel and theatre managers were shown the presentation materials and then queried about their opinions. The questionnaire used for the interviews was similar but not identical to the retail/restaurant survey. The form is included as Appendix B.

#### Characteristics of Hotel and Theatre Interviewees

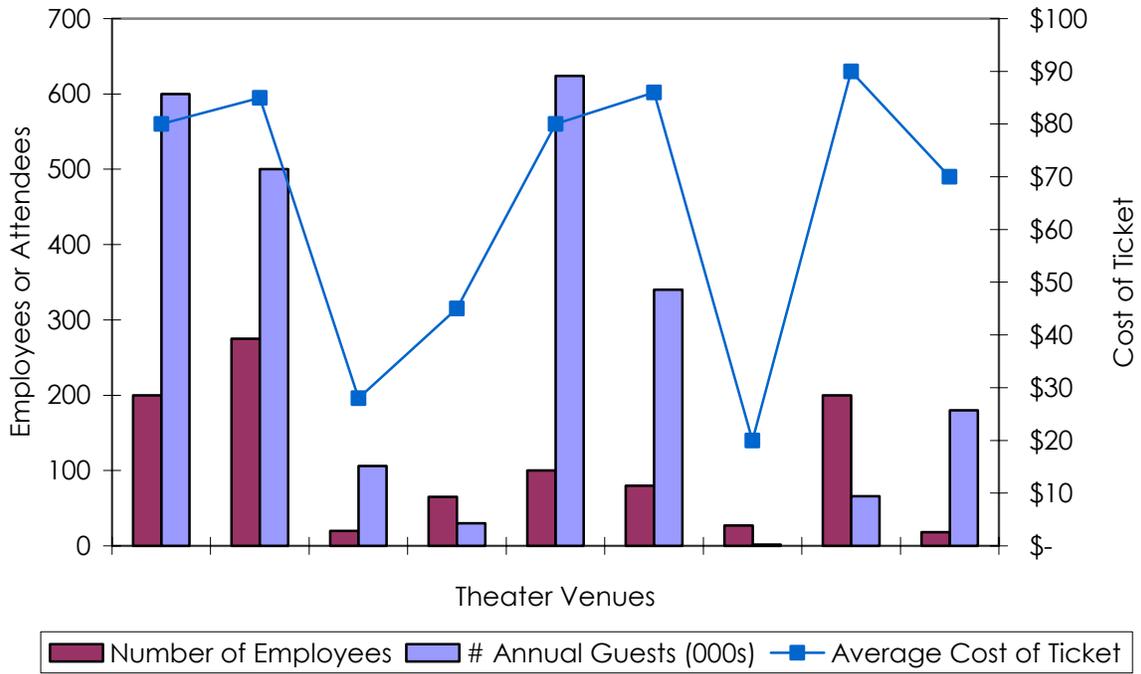
The average number of employees for all 16 hotels and theatres is 181. For hotels it is 344 and for theatres 108. The average number of annual hotel guests at the 5 hotels is 259,000, and the average theatre attendance (including movie theaters) is 536,000. The annual average attendance for the 2 movie theaters is 1,725,000 and for legitimate theaters on 42<sup>nd</sup> Street, 309,000. Charts illustrating the key statistics of the hotels and theaters interviewed follow.

**Chart 3.5**  
**Overview of Hotel Characteristics**



The average cost of a hotel room is \$202. The average cost of a theatre ticket (including movies) is \$49, and the average for a movie theater is \$10. The average for legitimate theatres on 42<sup>nd</sup> Street is \$60 and for legitimate theatres off 42<sup>nd</sup> Street, \$69.

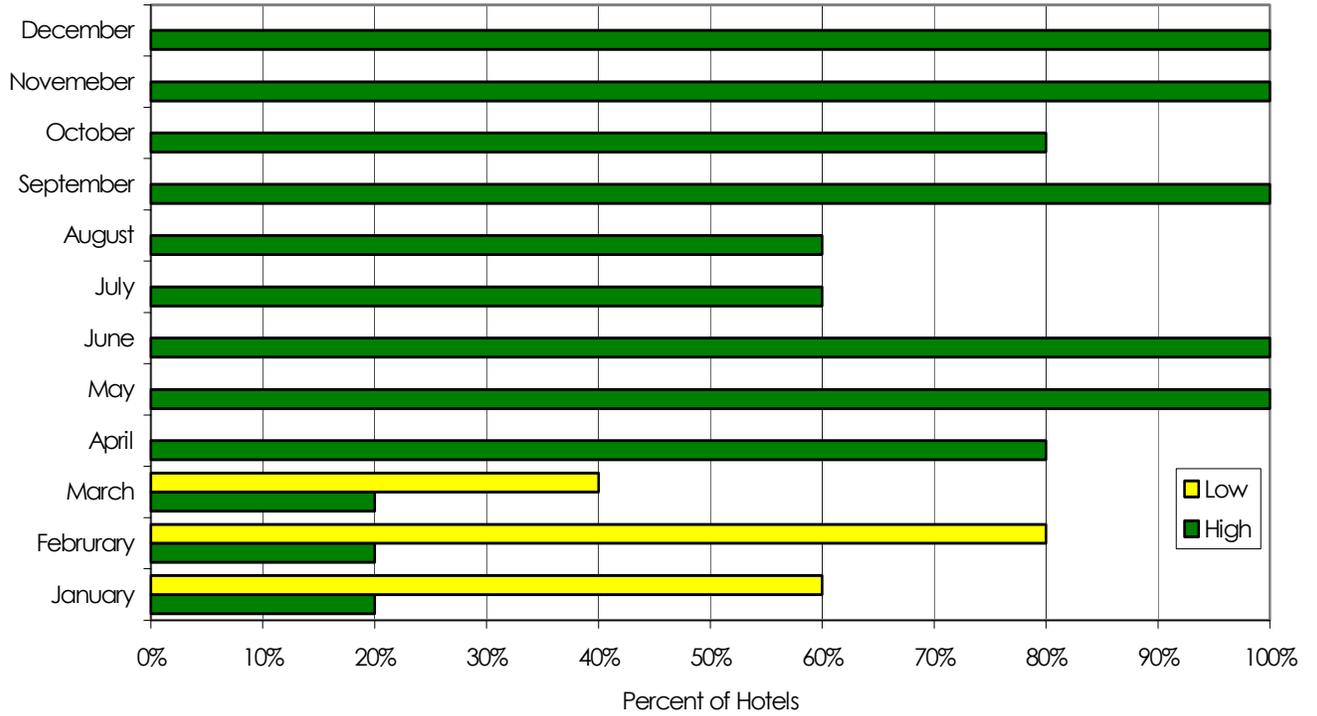
**Chart 3.6**  
**Overview of Theater Characteristics**



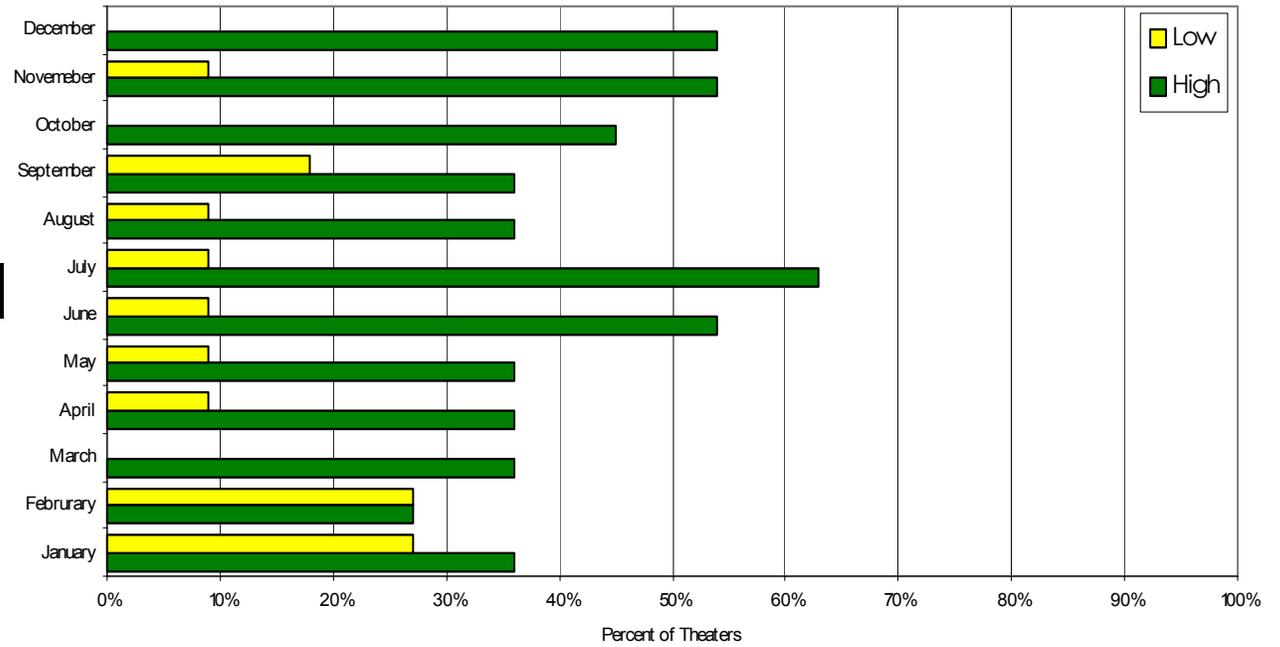
The high season for hotels and theatres varies somewhat, but generally covers spring through December. Low season for most is January-March, while July and August are also slow for some. Four organizations indicated the high season prevails all year.

Charts illustrating the high and low seasons for the interviewed hotels and theaters follow.

**Chart 3.7**  
**Hotels: High and Low Seasons**

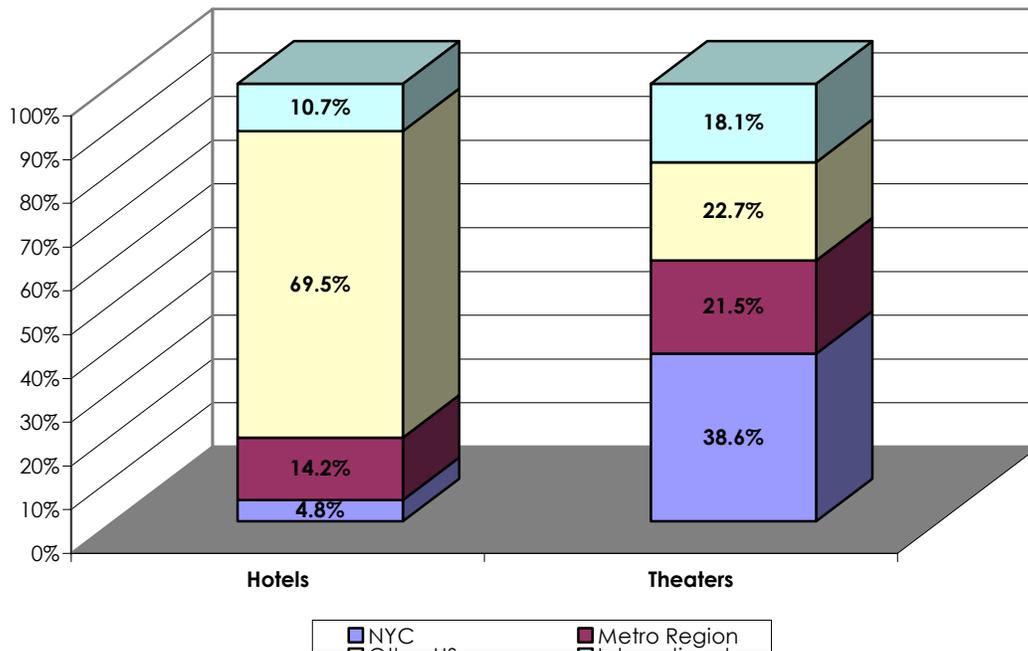


**Chart 3.8**  
**Theaters: High and Low Seasons**



Most hotel guests, over 80 percent<sup>2</sup>, were from outside of the NY-NJ region, with international guests representing 10.7 percent of total. Theatre attendees were much more likely to be drawn from the local resident population: 60 percent of attendees coming from New York City and its suburbs (38.6% and 21.5% respectively), with the remainder being split between other US and International origins.

**Chart 3.9**  
**Origins of Hotel Guests and Theater Attendees**



### 3.1.3 Current Locational Concerns

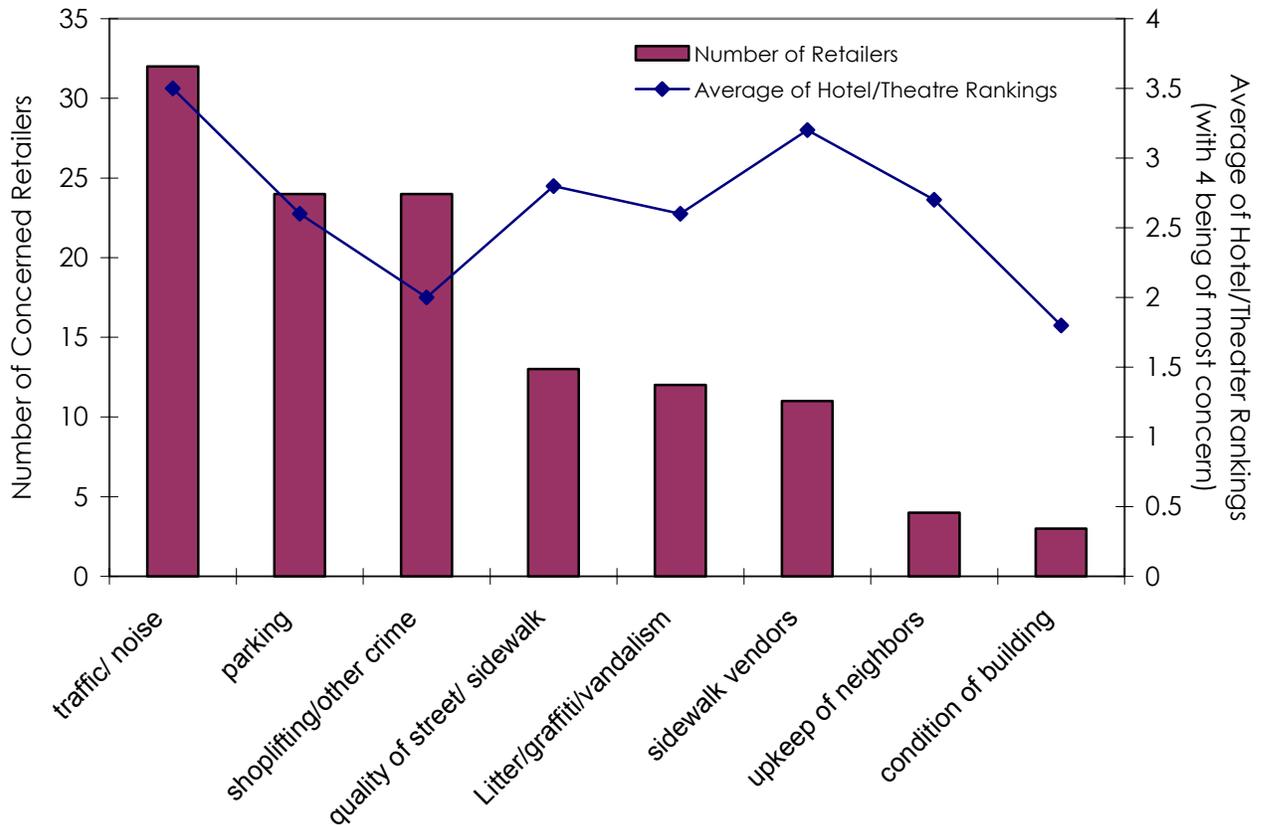
Both retailers and hotel and theater interviewees were asked about areas of concern regarding their current business location. Retailers and restaurateurs were asked to check a list of issues to demonstrate what concerned them. Interestingly, the retail and restaurant survey responses were almost universal regardless of business type or geographic location. There were no clear patterns of building neglect or crime.

The hotel/theatre interviewers asked managers to give a ranking of one to five (five being the worst) regarding their locational concerns. Overall, theatre and hotel managers' concerns on current conditions in their area were generally not major, with the bulk of responses falling between 2 and 3 ratings. Concerns of hotels were generally similar but slightly higher, while those of theatres were similar but a bit lower.

The total number of votes of concern from the 54 surveyed retailers and restaurateurs, as well as the average ranking from the 16 hotel and theatre interviews, are graphed below.

<sup>2</sup> Responses were weighted by annual guests or attendee totals per respondent.

**Chart 3.10**  
**Location Concerns of Retail Respondents and Rankings of Hotel/Theater Interviewees**



Retailer/restaurateur and hotel/theatre interviewees were in accord on their topics of most and least concern. Traffic and noise were of most concern to both groups of interviewees, receiving votes from almost 60 percent of survey respondents (19 retail shops and 13 restaurants) and an average rating of 3.5 out of 5 from hotel and theater interviewees. Building condition garnered the fewest votes from survey respondents (3) and averaged a ranking of only 1.8 from the interviewees.

Parking and shoplifting/other crime tied for second among retailers with 24 votes each, or 44.4 percent of respondents said they were concerned about these issues. Parking was also a concern for hotel/theatre interviewees, with an average rating of 2.5,

The quality and appearance of the immediate area were relatively important among hotels and theatres. The abundance of sidewalk vendors being of greatest concern with an average rating of 3.2, the quality of the street and sidewalk rating 2.8, the condition of adjacent property 2.7, and litter/vandalism averaging 2.6. Among this group, the movie theaters expressed even greater concern in those areas, with average ratings of 5 for the quality of streets and sidewalks, 4.8 for sidewalk vendors and 4.5 for litter/vandalism. These topics were of much less concern for retailers. Litter/graffiti/vandalism is a problem for 25.6 percent (14 votes) and quality of street/sidewalk for 24.1 percent (13 votes). Concern about sidewalk vendors received 9 votes

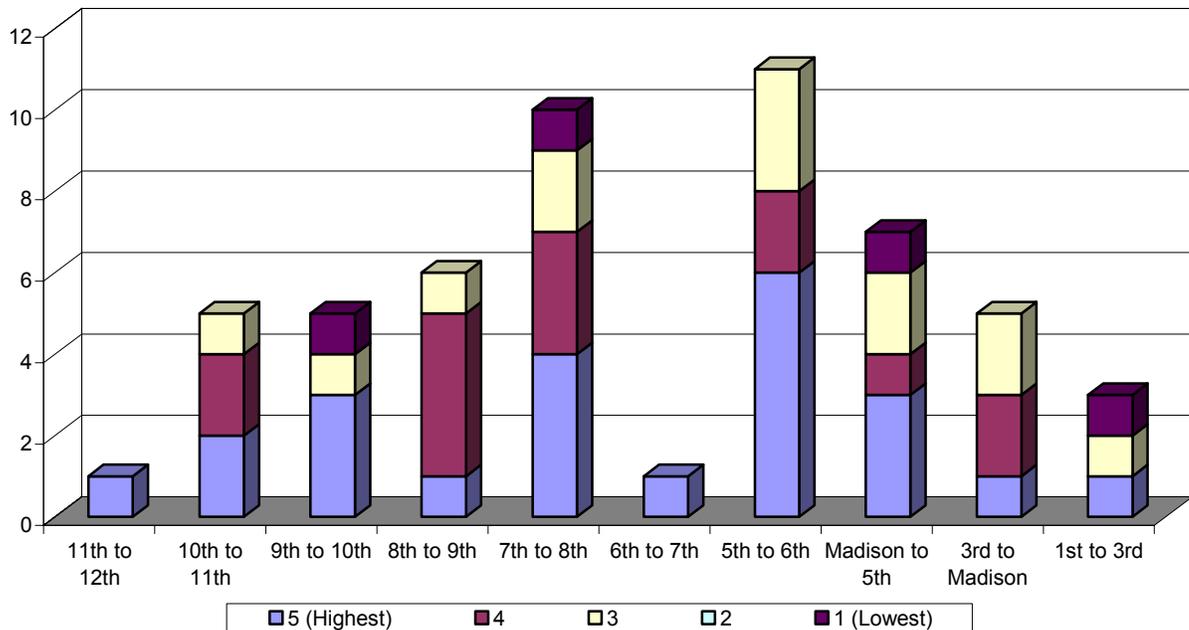
and was the only real split between retail and restaurant establishments, 8 and 3 votes respectively. Upkeep of neighboring buildings was of concern to only 4 retail businesses.

Retail respondents were given the opportunity to add any other concerns that were not listed in the survey. Additional responses were few, with notable exceptions. One establishment in the Bryant Park area had overall security concerns given the number of night activities and the large number of homeless in and around the park. An establishment near 10<sup>th</sup> Avenue complained of more serious specific crime problems such as prostitutes, gangs and drugs in the area. Other respondents used this opportunity to reemphasize already discussed issues—primarily traffic problems.

### 3.2 Benefits: Retail, Restaurant, Hotel, Theater

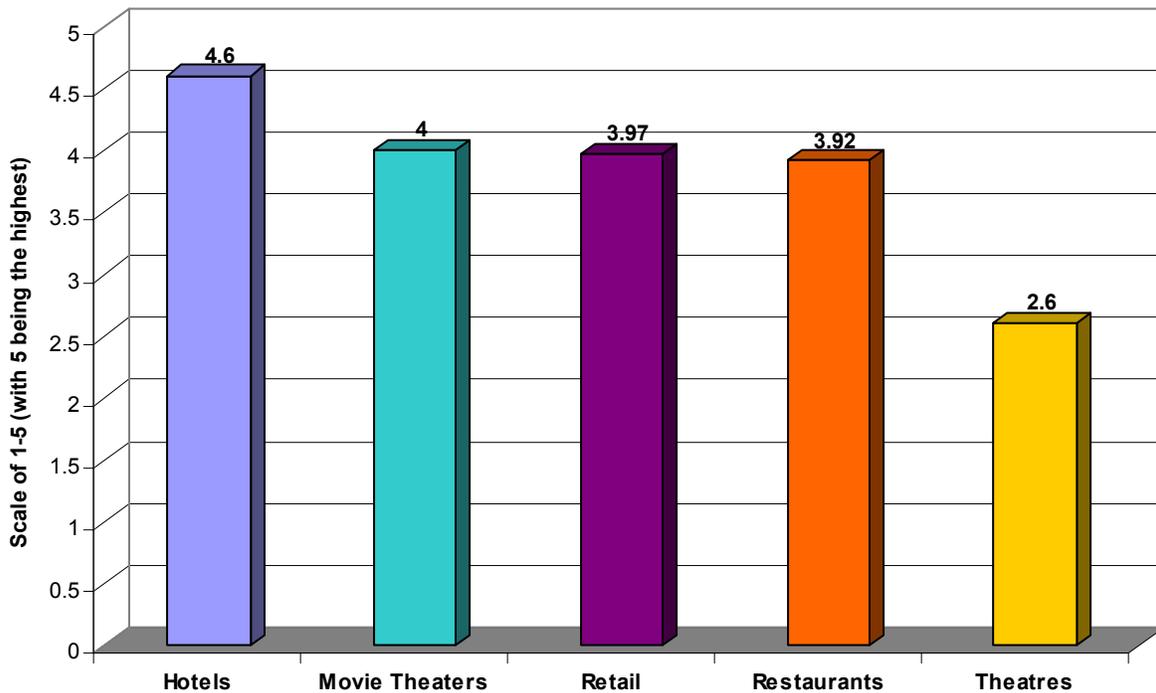
As part of the survey administration, an overview and description of the **vision42** concept was presented to retail shops and restaurants. They were asked to rate the idea on a scale of 1 to 5, with 5 being the most favorable. The average ranking of the **vision42** LRT proposal was 3.96 out of 5. Businesses west of 5<sup>th</sup> Avenue rated the idea slightly higher than those to the east (4.06 to 3.7 respectively), but the difference by business type was less than five hundredths of a point (3.92 food service, 3.97 retail).

**Chart 3.11**  
**Rating of vision42 Proposal by Retail Location**



The overall response of hotel and theatre interviewees to the proposal was 3.8. Hotels responded even more favorably with a score of 4.6, while theatres scored 3.4 on average. Movie theaters scored 4.0, but legitimate theatres on 42<sup>nd</sup> Street scored only 2.6, mainly reflecting concerns of smaller theatres west of 9<sup>th</sup> Avenue.

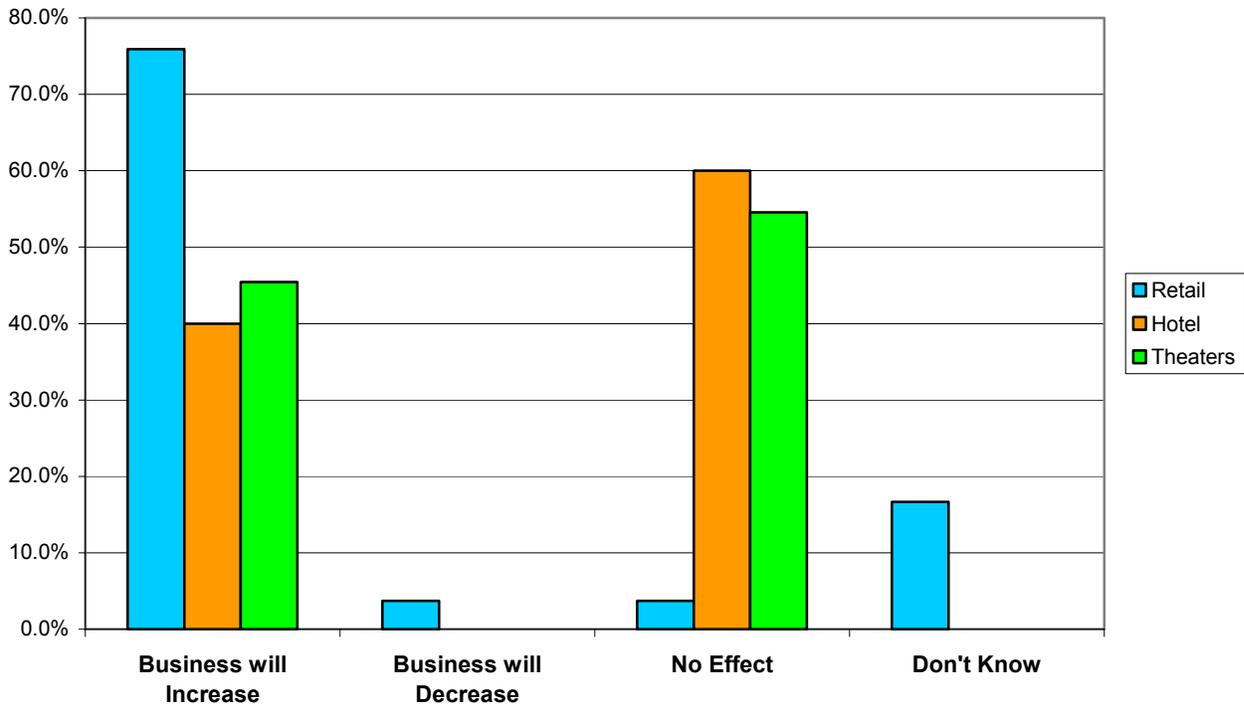
**Chart 3.12**  
**Rating of vision42 Proposal by Business Type**



Respondents were also asked for their thoughts on specific aspects of the proposed light rail plan, including the expanded sidewalk space and limitation of delivery and pickup services.

Seventy-six percent (76% or 41 retail establishments) thought the expanded sidewalks of the proposed plan would cause an increase in pedestrian traffic, 9 businesses were unsure of the effect, 2 firms each thought that the number of pedestrians would decrease or there would be no effect.

**Chart 3.13  
Anticipated Impacts of Pedestrianization on Business**

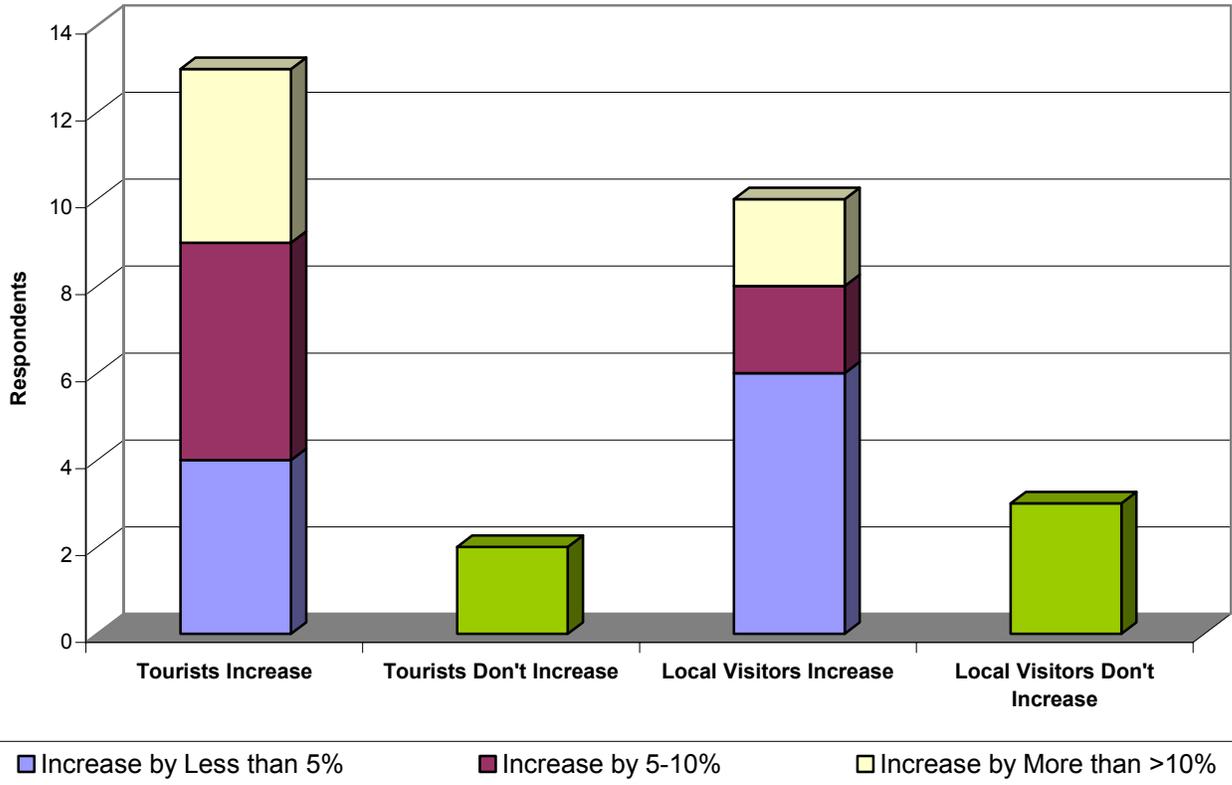


On the question of whether the potential growth in pedestrian traffic in the area would likely affect the hotel and theatre business, 9 of the 16 respondents saw no effect. The nine included 3 of the 5 hotels and 6 of the 9 theatres. Seven of the 16 said that it would increase their business. These 7 included both movie houses, 2 of the five hotels and 3 of the nine theatres. Three of the 7 theatres felt that the increase would be over 10 percent, 1 indicated 5-10 percent, and 2 less than 5 percent. Two of the 4 hotels with restaurants expected increases in restaurant business at less than 10 percent. The other two hotels saw no gain.

Additionally, the restaurants were asked if they would consider expanding their businesses to include sidewalk cafes. Eighteen or 61 percent said they would like to expand to a sidewalk café if there were ample space; 6 or 20.7 percent said "no"; 5 or 17.2 percent were unsure; and one establishment explained that it already had a sidewalk café permit, so expansion was unnecessary. Among the 5 hotels, 3 said they would expand their restaurants to the sidewalk on 42<sup>nd</sup> Street if permitted.

The hotel and theatre managers were questioned further about the characteristics of visitors that would be drawn to a newly pedestrianized 42<sup>nd</sup> Street. The results are summarized in the following chart.

**Chart 3.14**  
**Anticipated Pedestrian Characteristics**



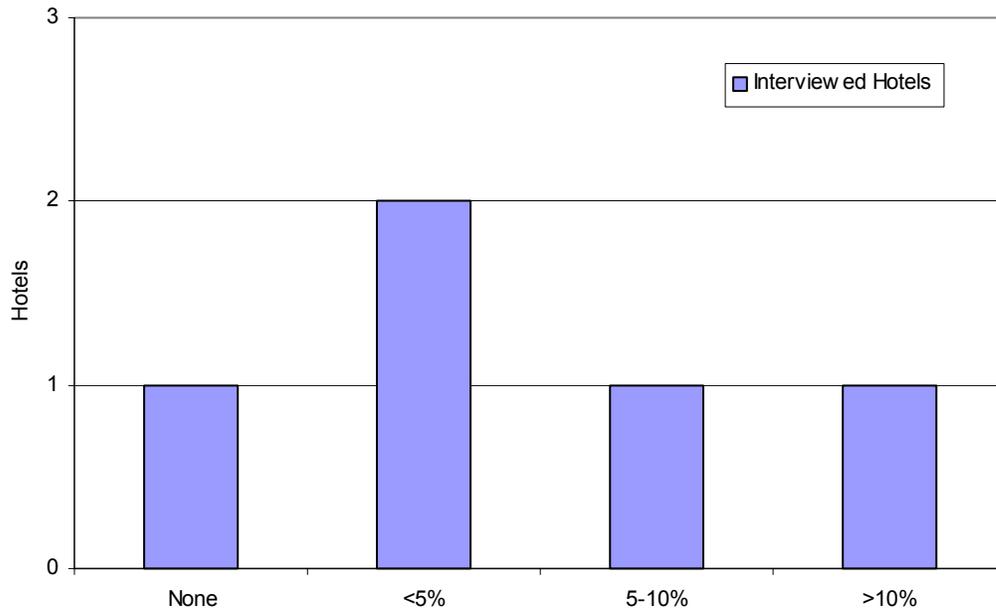
Fourteen of the 16 hotel and theater organizations said they felt the vision42 project would draw more tourists to the area. Five of the respondents thought the gains would be in the 5-10 percent range. Four other respondents thought the gain would be greater than 10 percent and four thought the gains would be less than 5 percent.

Twelve of 16 hotel and theater organizations said that vision42 would draw more local visitors to the area. Three said it would not. Six of the twelve agreed that growth would be less than 5 percent, 2 responded 5-10 percent, and 2 said more than 10 percent.

**Javits Center Conventioneers**

Among the 5 hotels interviewed, 4 responded they had guests that attended events at the Javits Convention Center. For one hotel, the share of Javits visitors was as high as 20 percent. Another registered a 5-10 percent response, while the other two respondents said Javits conventioneers were below 5 percent.

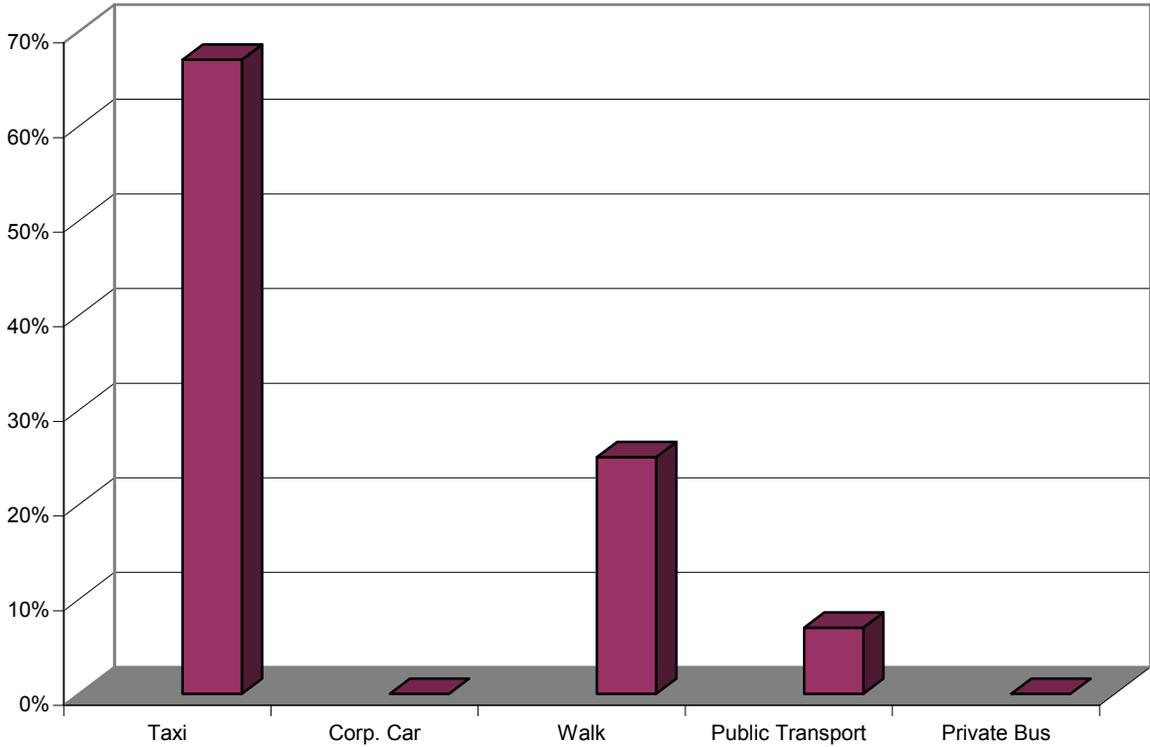
**Chart 3.15**  
**Proportion of Hotel Guests Attending Javits Center Events**



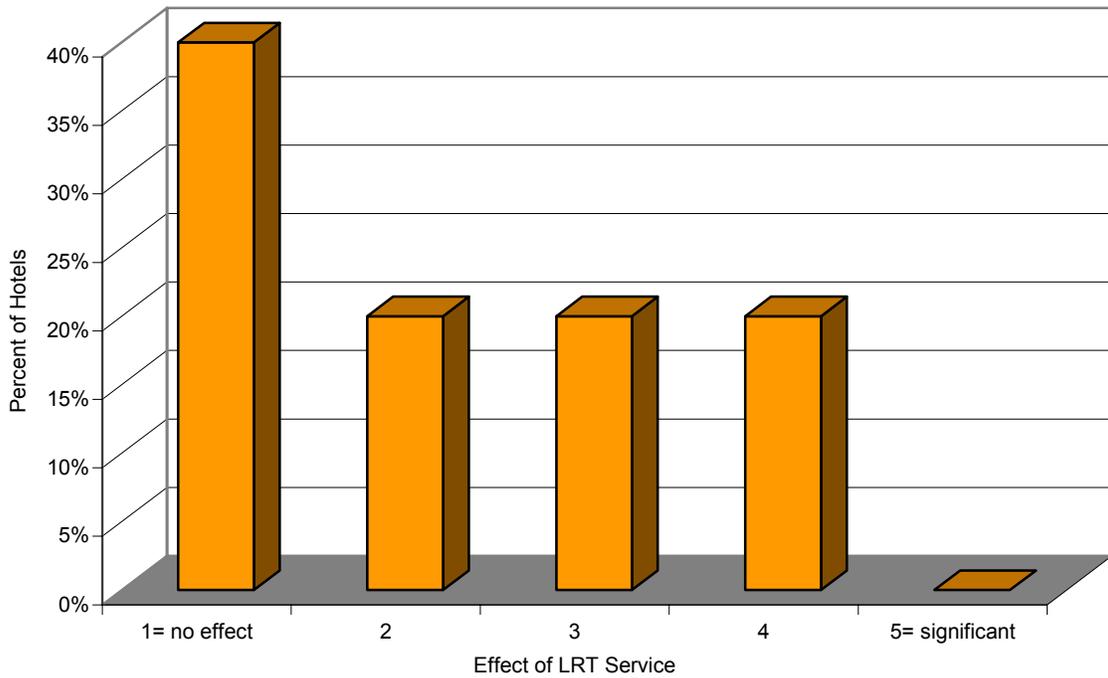
These responses were corroborated by the interviews with trade show sponsors and events coordinators who collectively stated that the majority of their attendees stay in hotels (under contracted group rates) in areas ranging from Penn Station to the Theater District or 50<sup>th</sup> Street, from which the trade show sponsors provide shuttle buses.

Taxis were the mode used by hotel guest in the vast majority of cases to travel from the hotel to the Javits Convention Center. Two hotels reported 100 percent of the Javits-bound guests use taxis. Public transport was noted by one hotel at 15 percent of the total, while taxis dominated at 85 percent of all trips to Javits. One hotel reported that nearly all their Javits-bound guests walked to the Center due to the close proximity. Private bus and limo were not mentioned.

**Chart 3.16**  
**42<sup>nd</sup> Street Hotel Guests' Mode of Transportation to Javits Center**



**Chart 3.17**  
**Effect of LRT Service to Javits on Hotel Room Occupancy**



Regarding the question of whether LRT service to the Javits Center would have a positive effect on business, the response was generally that it would have a relatively low effect. On a scale of 1-5, with 5 being the most significant and 1 being no effect, the average score for all respondents was 1.7. For hotels alone it was higher at 2.2, while theatres off 42<sup>nd</sup> Street registered only 1.2.

### **Long-term Positive Impacts**

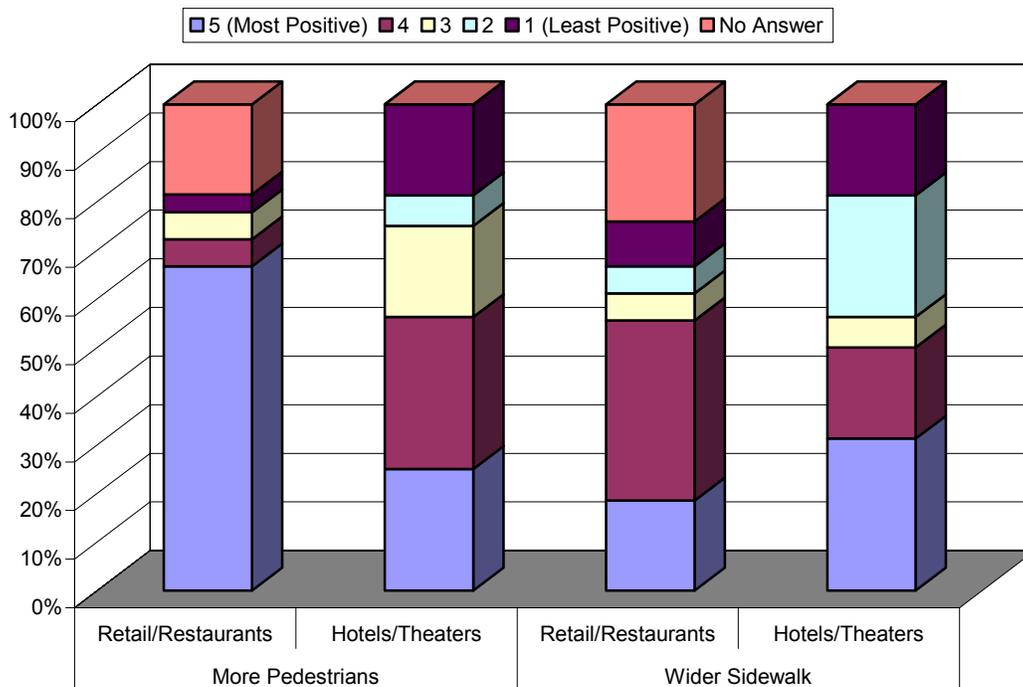
Survey respondents were asked to rank positive long term impacts of the **vision42** proposal on a scale of 1 to 5, with 5 being the most beneficial.

#### **Pedestrian**

Of the positive impacts, increased pedestrian traffic was ranked the highest by retailers with an average 4.6 rating. Of these, 36 respondents rated it at five (5). However, one dissenting respondent located near a current transit hub was concerned that his business would actually lose pedestrian traffic if the light rail were installed: “What if they just ride by?” Hotels and theatre interviewees rated the increased number of pedestrians at an average of 3.4.

Another characteristic of pedestrianization, wider sidewalk space, averaged 3.7 from retail and restaurant respondents and 3.2 from hotel and theatre interviewees. Detailed results are illustrated in the table below.

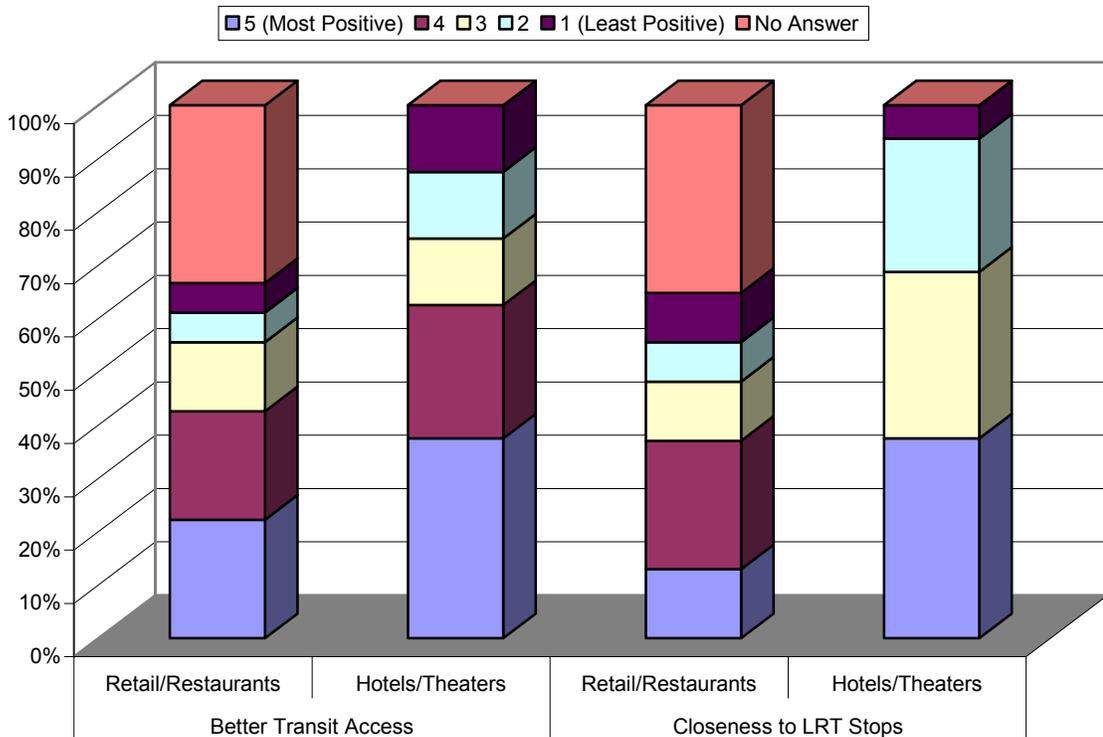
**Chart 3.18**  
**Ratings of Positive Pedestrian Impacts**  
 (Scale of 1-5, 5 being the highest.)



## Transit

Better transit access received the second highest average from retailers and restaurants with a score of 3.75. This category rated a 3.6 from hotels and theaters. Closeness to LRT stops rated an average of 3.4 for both retailers and hotel and theatre organizations.

**Chart 3.19**  
**Ratings of Positive Transit Impacts**  
 (Scale of 1-5, 5 being the highest.)

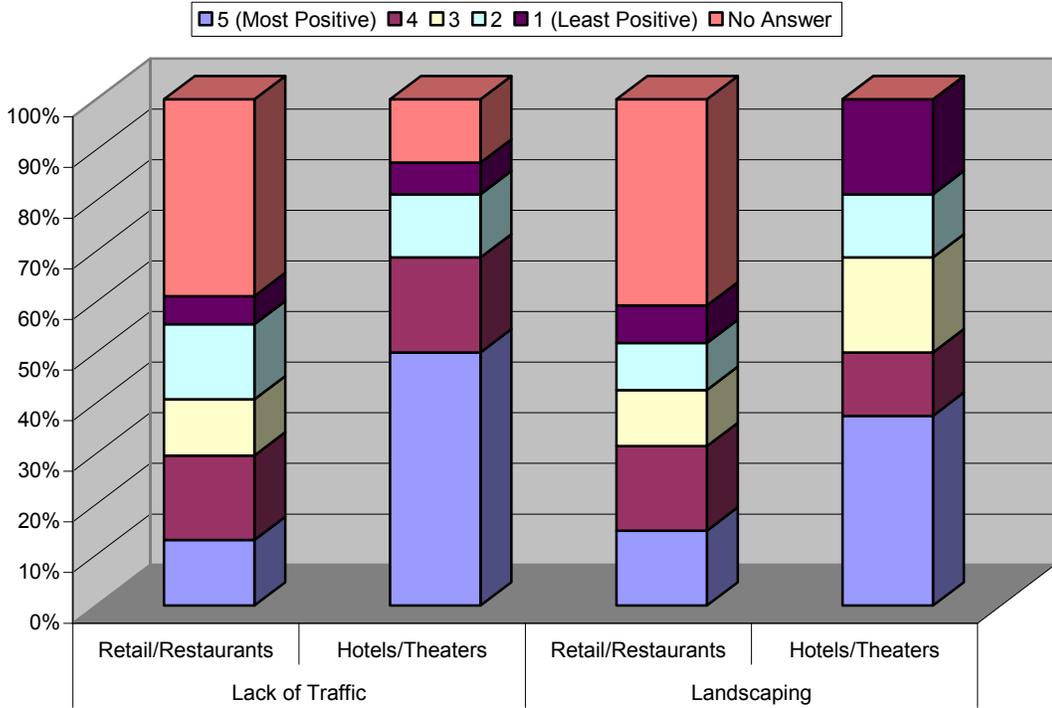


## Streetscaping

Retailers did not rate streetscaping improvements as highly as their hotel and theatre counterparts. Lack of traffic, even though traffic had earlier been ranked as one of the most important concerns about current conditions, rated lowest at an average 3.3. Additional land/streetscaping amenities rated a slightly higher average of 3.4. However, more than 20 businesses in each category did not even respond to the question.

For hotels and theatres, the streetscaping improvements of vision42 were the most favorable. Responses to the question of what would what cause a positive long term impact on business showed that lack of traffic congestion scored the highest, with 4.1. Landscaping and amenities also scored quite high for hotels and theatres with an average score of 3.4. The full responses are illustrated below.

**Chart 3.20**  
**Ratings of Positive Streetscaping Impacts**  
 (Scale of 1-5, 5 being the highest.)



Legitimate theatres on 42<sup>nd</sup> Street considered lack of traffic congestion an even more important factor with a score of 5, while off-42<sup>nd</sup> Street legitimate theatres considered it less important, with a score of 3.4.

Seven retail and restaurant establishments responded that there would be no positive effects from the **vision42** plan.

### 3.3 Disbenefits: Retail, Restaurant, Hotel, Theatre

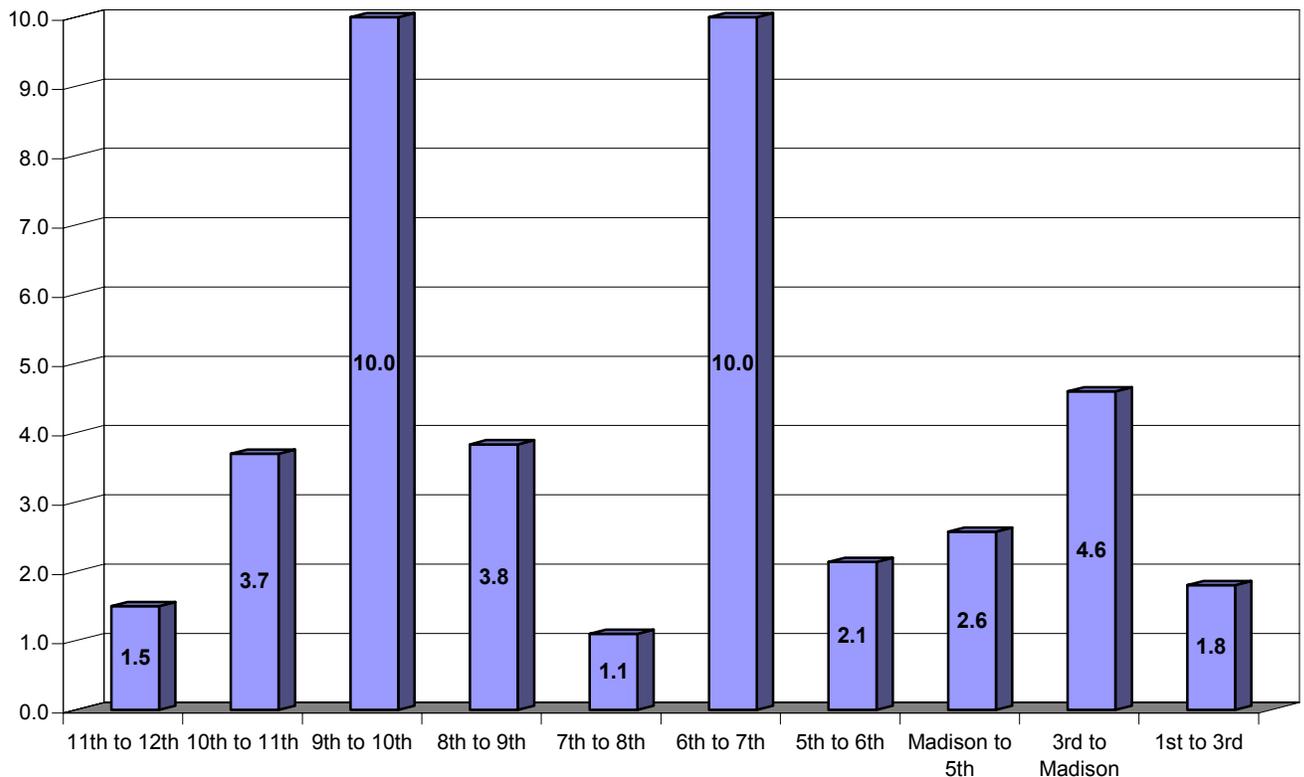
Retailers, restaurants, hotels and theatres were questioned about aspects of the vision42 plan that would impact delivery and trash services, create disruption during construction, and cause other negative short-term impacts.

#### Deliveries

Of the 54 retail firms interviewed, 44 receive deliveries through their 42<sup>nd</sup> Street entrances. These deliveries average 4.9 per day for restaurants (primarily in the morning) and 3.4 per day for retail shops (generally throughout the course of the day). Thirty-eight reported their delivery trucks park solely on 42<sup>nd</sup> Street.

As shown in the following chart, the average number of reported deliveries per store per day on 42<sup>nd</sup> Street varies greatly from block to block. The greatest number of deliveries (an average of 10 per day each) takes place on the block segment from Sixth to Seventh Avenues, followed by the segment from Ninth to Tenth Avenues. The segment between Third and Madison has the third highest level with an average of 4.6 deliveries per store per day, followed by the Eighth to Ninth and Tenth to Eleventh blocks with 3.8 and 3.7 deliveries, respectively. Based upon survey responses, the remaining block segments average between 1 and 2.6 deliveries per store per day.

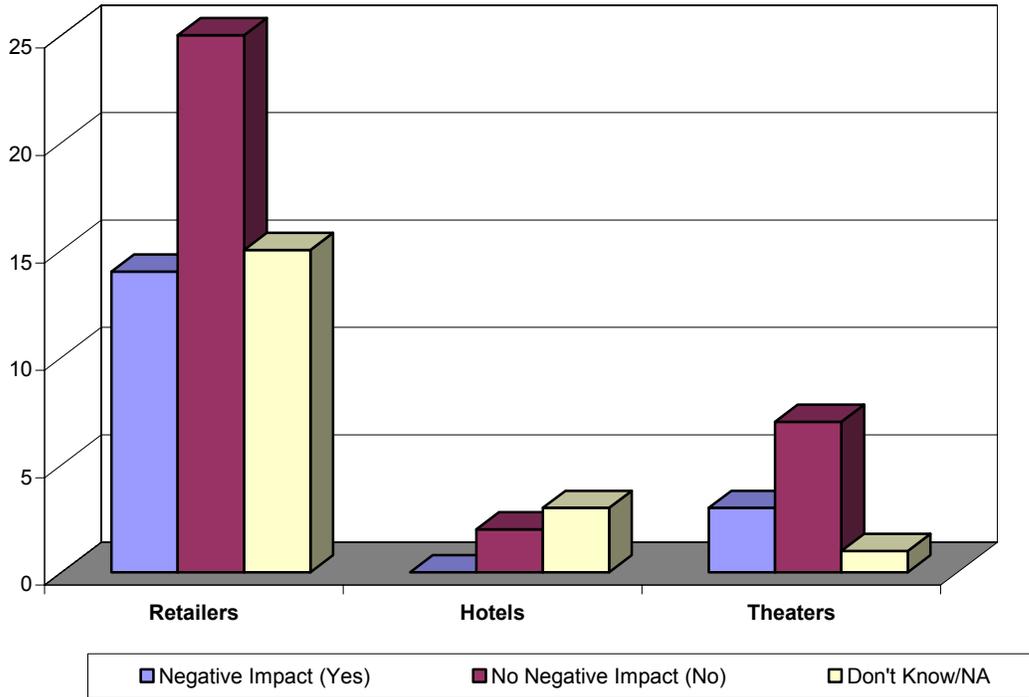
**Chart 3.21**  
**Retail Survey Respondents'**  
**Average Daily 42<sup>nd</sup> Deliveries per Store by Location**



Only one of 11 hotel and theatre organizations located on 42<sup>nd</sup> Street responded that their freight entrance is available only on 42<sup>nd</sup> Street. All others have entrances on 41<sup>st</sup> or 43<sup>rd</sup> Streets. Two others among the 11 receive deliveries both on 42<sup>nd</sup> and 41<sup>st</sup> streets. For these 3 organizations, deliveries are typically made during the daytime and the number of deliveries ranges from 2 per week to 5 per day.

When asked if moving delivery truck parking to a dedicated space on the Avenues would impact their business, 16 restaurant and 9 retail businesses (56.8%) said no, while 7 restaurants and 8 retail shops (34%) were unsure of the impact. Fewer than one in three, or 9 retail shops and 5 restaurants, said moving delivery truck parking would have an impact on their business.

**Chart 3.22**  
**Anticipated Negative Impact of Delivery Parking Relocation**

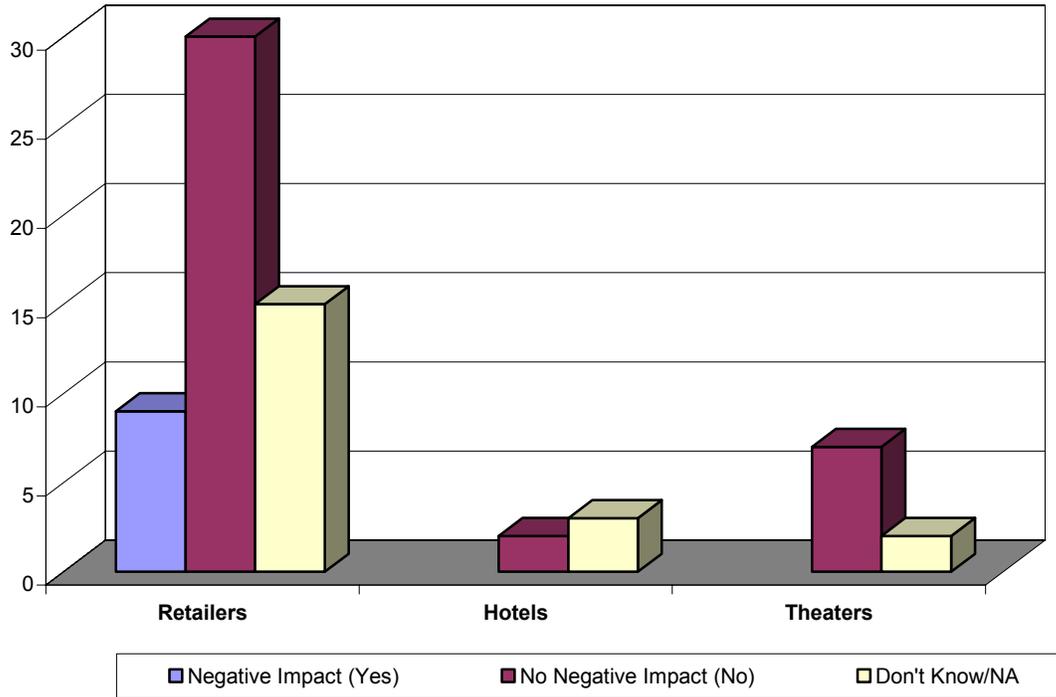


The relocation of truck parking away from 42<sup>nd</sup> Street was regarded as hurtful to business by 2 of the 3 hotel and theatre organizations that receive some or all their deliveries on 42<sup>nd</sup> Street. All other organizations did not see it as a problem, with the exception of one theatre off 42<sup>nd</sup> Street, which indicated a concern about traffic diversion causing delays on side streets adjacent to 42<sup>nd</sup> Street.

**Trash**

Under the current plan, trash pickup would happen at night, from receptacles placed approximately every fifty feet on 42<sup>nd</sup> Street. The interviewed firms were asked if having to carry trash to the receptacles would impact their business. Thirty (30) firms, split evenly between retail and restaurant, said no and fifteen firms (9 retail shops, 6 restaurants) were unsure whether carrying the trash a few extra yards would make a difference. However, seven restaurants and 2 retail shops felt taking trash to the receptacles, instead of straight to the curb, would have an impact. One regional manager explained his concern: "It's a matter of security—the extra time it takes for our guy to carry the trash down the street is more time that the front door is open [and vulnerable to robbers]."

**Chart 3.23**  
**Anticipation of Negative Impacts from Trash Relocation**



Only one hotel/theater organization currently disposes of trash from its 42<sup>nd</sup> Street entrance. The idea of having night time trash pick up on 42<sup>nd</sup> Street did not seem to be a concern to any organization.

### **Construction Impacts**

Key issues and timing of the construction process were described to the respondent. Factors included a two year overall construction period performed in three segments concurrently; 5 to 6 months active construction on each block; a transparent construction process; unobstructed sidewalks, crosswalks and bus service throughout construction; as well as no interruption to utility services.

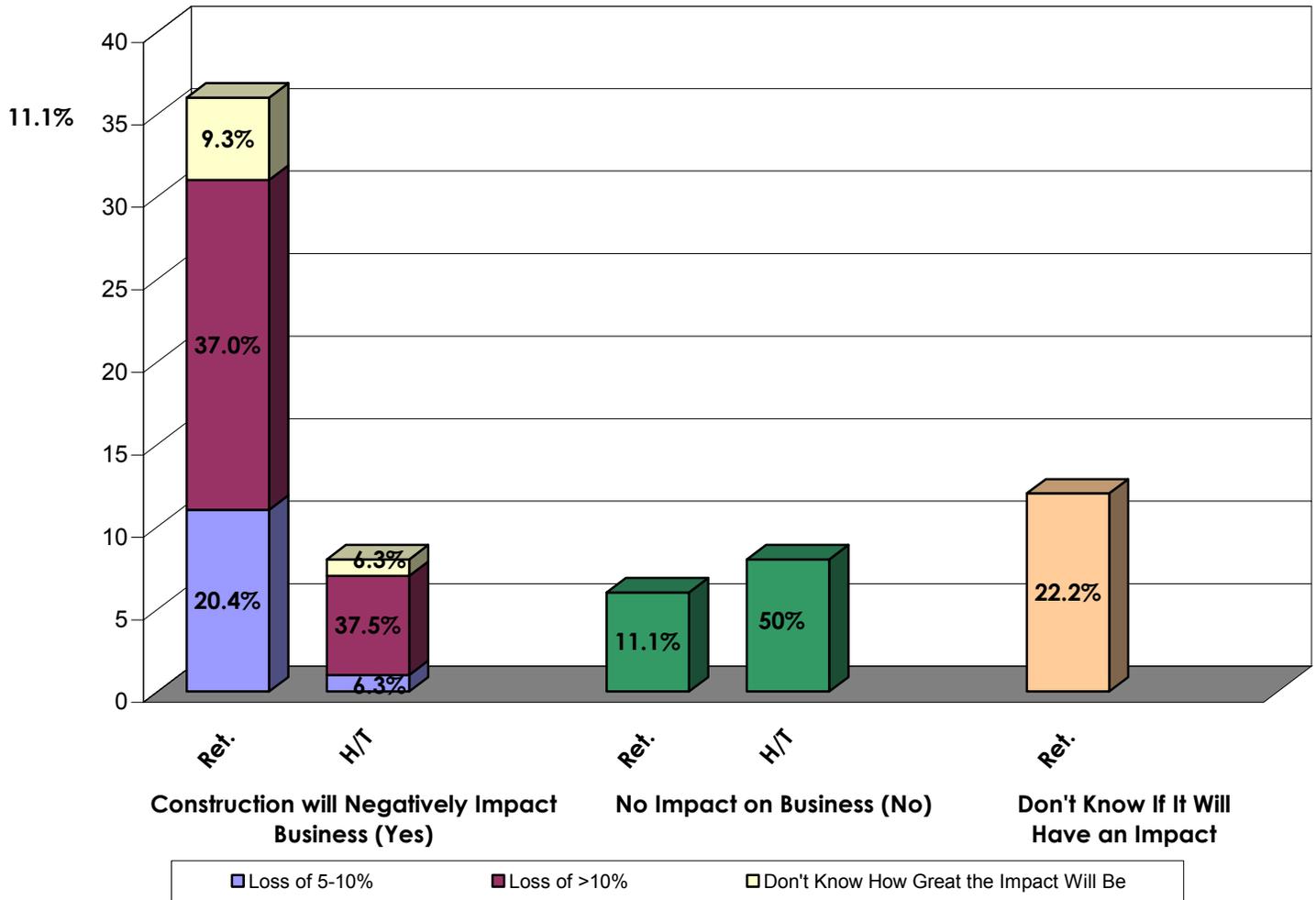
Respondents were asked what they thought impacts of the construction process would be. Two thirds of retail respondents felt that the 5-6 month construction period would negatively impact their businesses. Twenty two (22%) percent did not know if construction would impact them or not. Six firms, or slightly more than 10 percent, did not feel that construction would adversely impact them at all. Of those who felt construction could hurt their operations, more than half (20) of the negative respondents estimated losses of more than 10 percent. An additional 11 felt that losses would range between 5 and 10 percent. The final four firms with negative perceptions would not quantify the expected loss.

Overall, hotel and theatre managers interviewed did not consider the construction period to be as disruptive as retailers and restaurateurs. Eight of 16 hotel and theatre organizations thought a 6 month construction period would be hurtful to business. The remaining 8 did not perceive a negative impact. However, among the first group, estimates of the negative effects were high

with losses noted at over 20 percent and 30 percent, even reaching 50-75 percent loss by one organization.

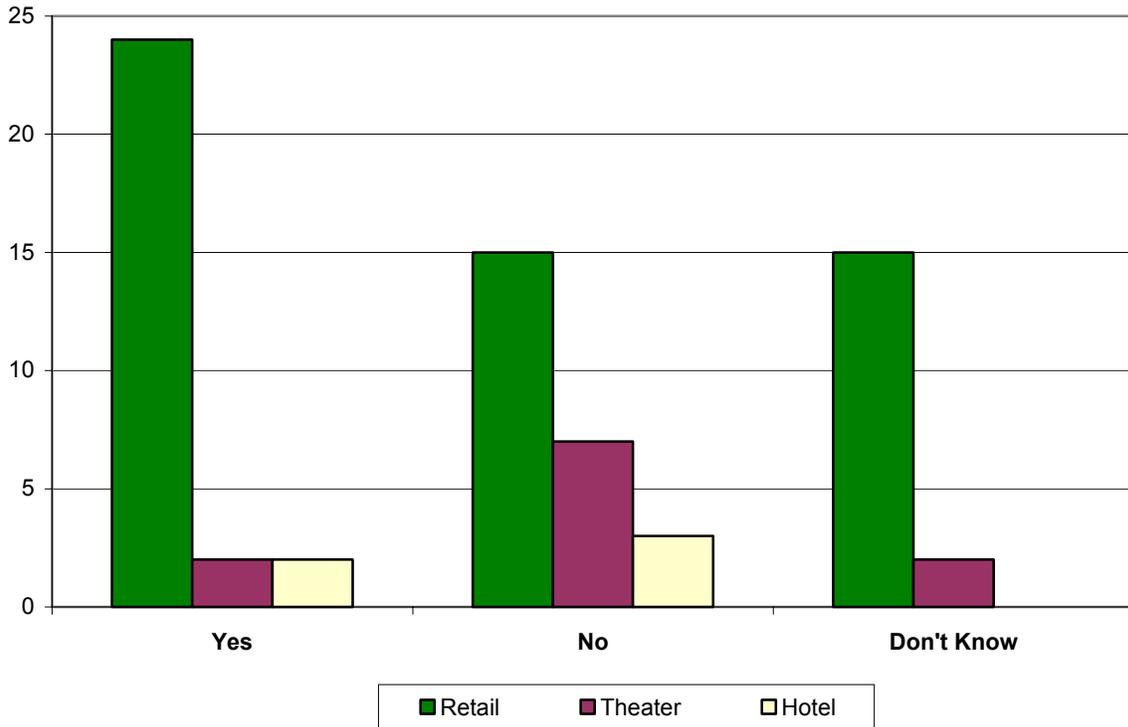
**Chart 3.24**  
**Anticipated Impact of Construction on Business**

(Active construction on each block would take 5-6 months... Would a 5-6 month construction period impact your business? If yes, by how much?)



Retail survey respondents were asked if a longer than 2-year build time would have additional impacts on business. Twenty-four or 44.4 percent said yes; 18 or 33.3 percent were unsure; and, 15 or 27.8 percent said no. Of those who felt the impacts would be greater, several responded they would be unable to survive an extended construction period.

**Chart 3.25**  
**Would a Longer Construction Period Change Your Opinion to the Negative?**



Five of 16 hotel and theatre respondents said that if it took longer to construct the LRT their opinions on the effect of the construction on their business would change to the negative. The other 11 respondents felt there would be no impact on their business. Movie theaters were particularly concerned about the disruption caused by noise during all hours of the day.

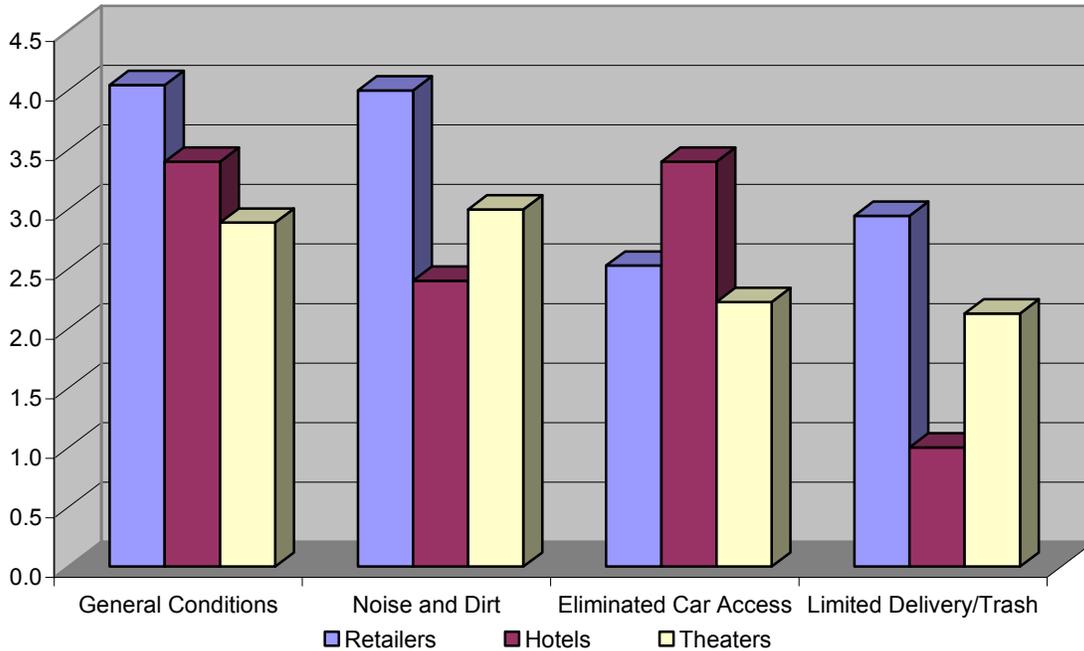
**Short-term Negative Impacts**

Survey respondents were asked to rank negative impacts from 1-5 with 5 being the most disruptive. General construction disruption was a matter of great concern, ranked at 4.0 on average, as was more specific noise and dirt from construction. The impacts of limited delivery service and trash pickup were of less concern to respondents and averaged only a 2.9 rating. The elimination of car access on 42<sup>nd</sup> Street rated lowest in disruption for retailers and restaurateurs, averaging only 2.59.

For hotels and theatres, construction-related environmental conditions such as dust and noise ranked first, with an average score of 3 for all 16 organizations. Disruption for customers during construction ranked second with a score of 2.9, and the elimination of car and taxi service to hotels and theatres on 42<sup>nd</sup> Street ranked third with a score of 2.6.

A chart illustrating the average rating of construction inconveniences by respondent type follows.

**Chart 3.26**  
**Average Ratings of Construction Inconveniences**  
**(Scale of 1 to 5. 5 = Most Disruptive)**



Among hotels, construction disruption and elimination of cars and taxis scored the highest at 3.4 each. For theatres on 42<sup>nd</sup> Street, construction related environmental conditions were the key factor with a negative score of 4.4. Legitimate theatres off 42<sup>nd</sup> Street showed little negative effect from any variable, with overall scores under 2.1. Concerns over short-term effects at hotel restaurants mirrored those of hotels in general, but were more muted. More concern was expressed about the loss of business due to the relocation of passenger drop-off and pick up in front of hotels or theatres on 42<sup>nd</sup> Street. Five organizations among the 11 located on 42<sup>nd</sup> Street said that business would be lost, with four of these saying that the loss could be high, well over 10 percent. The other organizations generally did not see this as an issue.

Retail respondents were also asked to name and rank any other concerns they may have. Not surprisingly, the average rank of individual concerns was 4.7. Among these were concerns about the construction process blocking sightlines into retail establishments, the subsequent loss of impulse shoppers, and the fear that if a steady stream of business was not maintained, employees who work on commission would leave.

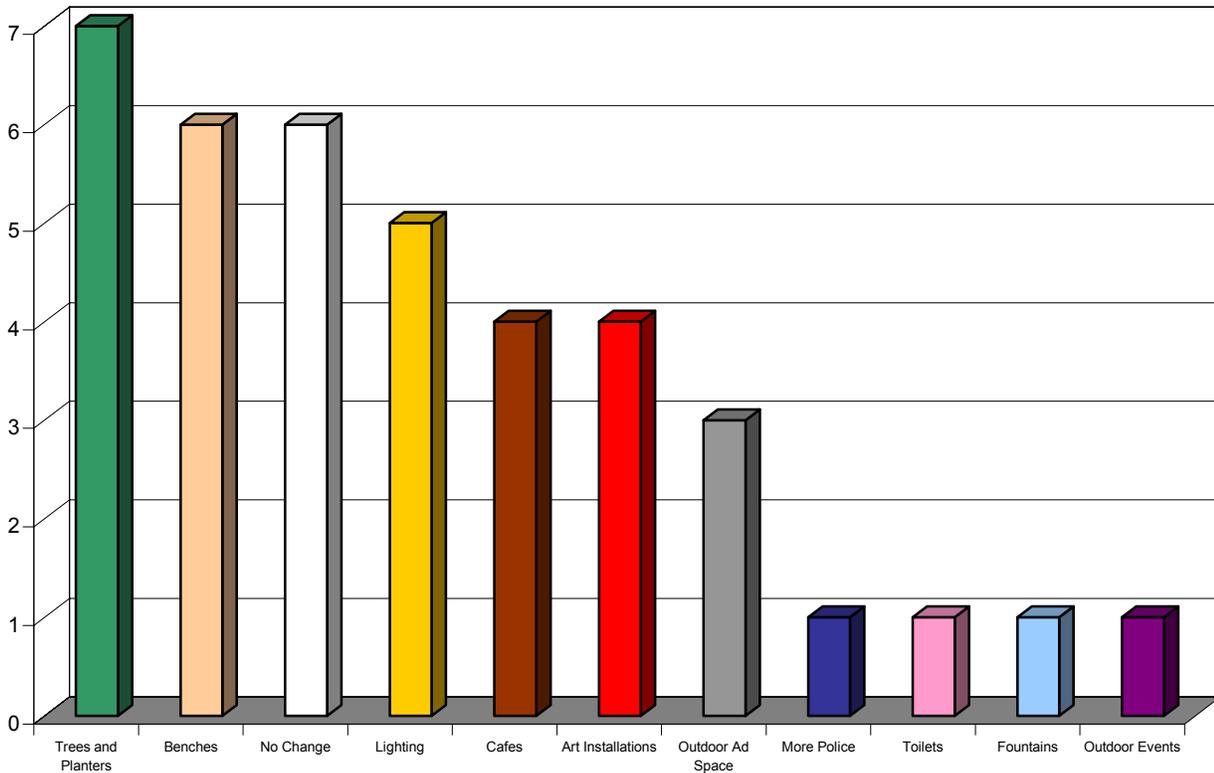
### **3.4 Proposed Improvements & Suggested Mitigations**

Both retail/restaurant and hotel/theatre interviewees were given the opportunity to express their overall opinions, suggestions, comments and concerns at the end of the survey/interview.

## Retail

Retail and restaurant survey respondents were asked “What streetscape amenities, promotional or other efforts would you propose for a new 42nd Street?” They were also asked if they had any further comments or concerns. The primary response was to list additional amenities they would like to see on 42<sup>nd</sup> Street, as illustrated below.

**Chart 3.27**  
**Improvements and Amenities Recommended by Retail Respondents**



Trees and planters were suggested by 7 respondents. Additional seating or benches on the street were requested by 6 respondents. Better lighting was mentioned by 5 businesses, open air cafes and art installations were suggested by 4 shops each, while outdoor advertising space was requested by 3 businesses. More police presence, toilets, fountains and outdoor events each received one comment.

Six respondents requested that no change at all take place on 42<sup>nd</sup> Street, most fearing that the construction period would put them out of business. One unusual respondent who requested no change did so saying that his business was so good currently that any change could only decrease it. The only other concern voiced was that additional outdoor seating would create a larger homeless presence.

## **Hotels and Theatres**

### **Amenities**

The majority of interviewees viewed streetscape amenities as a desirable part of the plan and many offered suggestions in response to an open-ended question regarding improvements they would like to see take place. Some of the most common responses included exhortations for better landscaping linked to clean air and environmental concerns: "Landscaping is very important. The area near the hotel should have a green canopy of trees, flowers, etc. It should feel like a natural oasis. Clean environment should be promoted." Other common suggestions included attractive LRT stations with interactive directories to advertise theatres, information kiosks and stands for food and souvenir vendors. "...It would give people a place to relax, and would give casual access to the entire street."

It should be noted, however, that a number of theatres expressed greater concern over congestion and the homeless, than ambiance of the neighborhood. Most theatres and some hotels noted they do not rely on walk-in traffic to fill seats or rooms.

### **Mitigations**

This final open-ended question on whether interviewees had questions or comments on the proposal invited a range of comments and suggestions from the general managers of hotels and theatres. Many used this as an opportunity to provide broader views on the entire project, or to raise specific concerns about their own organizations. A number of suggestions were provided to help overcome potential obstacles and to identify specific remedies that would help with a perceived problem. The main points are grouped by topics ranging from organization-specific concerns about giving up vehicular access, to general opinions about the project:

#### Customer drop off and pick-up:

- "Accommodating taxis at the Port Authority Bus Terminal will be a big issue."
- "Pick-up and drop-off on the Avenue will not suffice for most hotel guests. It will hurt business severely. Need to have taxis, black cars, special buses like airport shuttle, private cars and commercial vehicles (in this order) at front door on 42<sup>nd</sup> Street."
- "Over 90 percent of all guest and visitor entry to hotel is via 42<sup>nd</sup> Street doors. It is crucial to keep traffic moving in front of the hotel doors for taxis, limos, other special passenger vehicles and valet parking. Pick up and drop off on the corner of the Avenue will not work."
- "Movie business is generally "walk-up" and so would not be hurt by the lack of taxi/car drop off."
- "Passenger pickup and drop-off is another big concern with a large proportion of the audience older."
- "Extremely dependent on having parking nearby"

#### Deliveries:

- "Allow early morning deliveries on 42<sup>nd</sup> street, but not taxis and other traffic."
- "Nighttime deliveries should be considered, as in Chicago."
- "Lack of truck access to the 42<sup>nd</sup> Street entrance would kill us." (Theatres west of 9<sup>th</sup> Avenue dependent on bringing sets through their 42<sup>nd</sup> Street entrances)

#### Vehicular traffic as part of the plan:

- “The plan would be stronger if vehicular traffic were to be limited between 3rd and 9th Avenues only. This portion of the street could be a real mall. Also, the section between 6th and 8th Avenues could be covered by a canopy (as in downtown Las Vegas, for example). The stretch between 1st and 2nd Avenues sees very little pedestrians and at times is desolate. The area, which is strictly residential with special bypasses from Tudor City, and the Ford Foundation (with main entrance on 43rd Street), suffers from a severe wind-tunnel effect. Therefore there is no reason to close it off to traffic anyway.”
- “The 1994 plan for a light rail was better. It allowed traffic to continue on 42nd Street.”
- Theatres west of 9th Avenue said the following: “Like the idea of traffic restriction limited to the area from Times Square to Grand Central.”

Concern that traffic would worsen in the surrounding area:

- “42nd Street and parts of surrounding area already have major traffic problems. Great concern about traffic overflow from 42nd Street into adjacent streets. Big traffic issues around tunnel entrance and feeders to tunnel.”

Security and other related concerns:

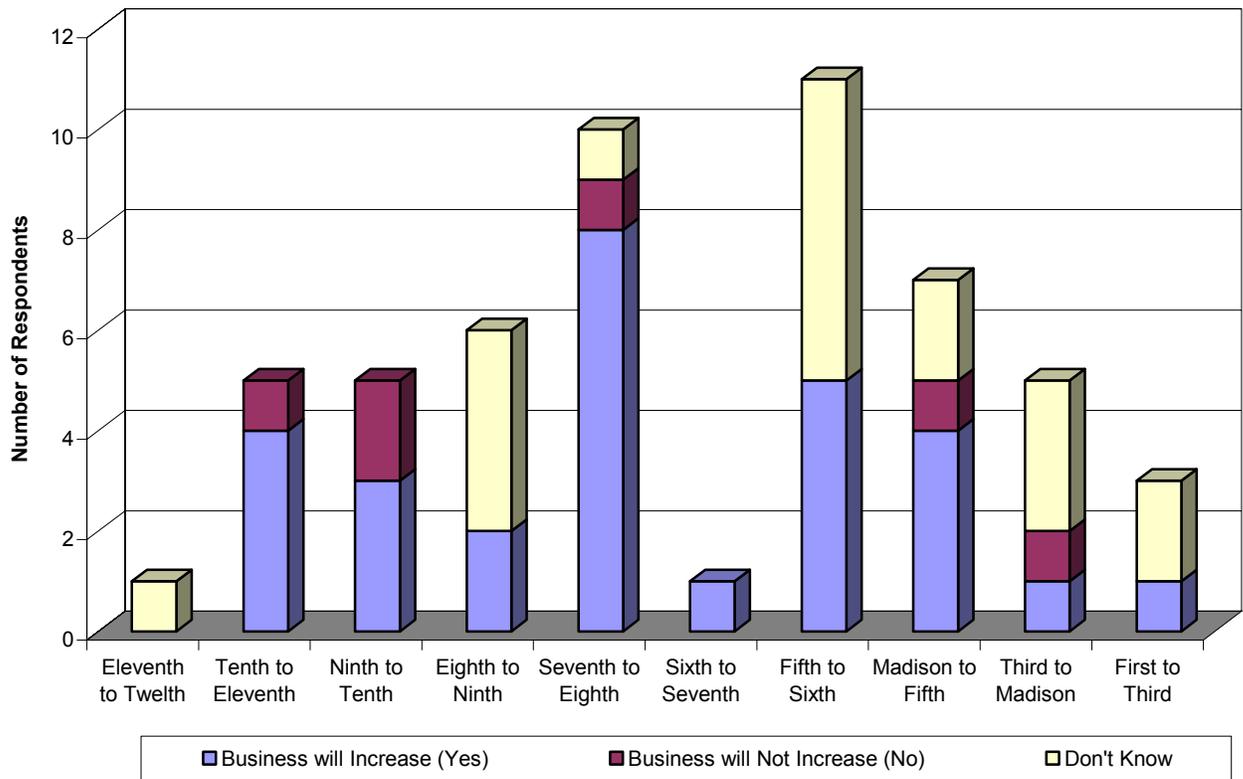
- “Dealing with the homeless situation is another key concern, with worries that amenities, like trees and benches, could make the problem worse. Suggests a police booth in the area to discourage homeless people – and others – from congregating.”
- “Lighting for safety is also important.”
- “Safety features, especially Fire and Medical are critical to keep up and accessible.”

For some respondents, concerns obscured their view of possible benefits. As one put it, “[I] do not think that the proposed LRT would have any positive effect.” In interviews with organizations that would not be negatively affected, the respondents were more likely to embrace the vision of the project.

### 3.5 Overall Anticipated Effect on Business

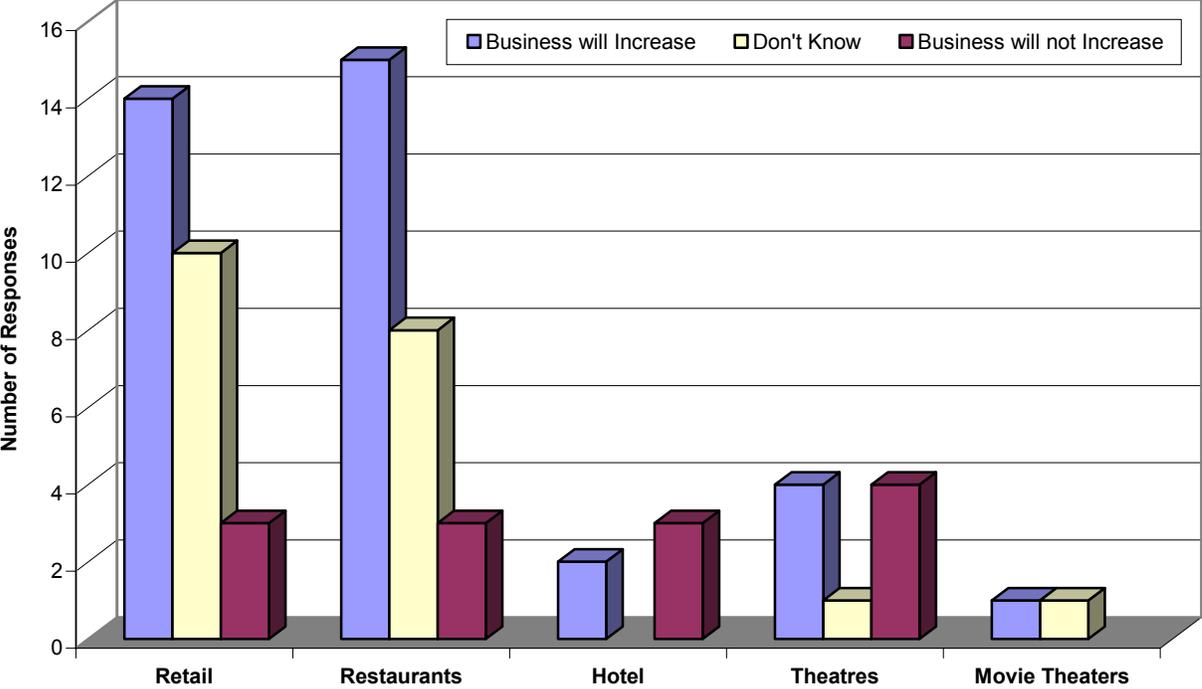
After discussing both positive and potentially negative impacts of the **vision42** proposal, as discussed in Chapters 3.2 and 3.3, respondents were asked if they thought the completed light rail would increase business. Six firms did not think the LRT would improve their business and eighteen firms were unsure and not willing to speculate; however, 15 restaurants and 14 retail shops (53.7% of all respondents) said yes. Following is a chart listing retail survey respondent answers by street segment.

**Chart 3.28**  
**Retail Respondents by Location**  
**Anticipated Change in Business from Completed vision42**



Of the hotel and theater respondents, seven, including two hotels, one movie theater and 4 legitimate theatres said the proposed LRT operations would increase their business. Another seven, including 3 hotels and 4 theatres, said it would not. One movie theater and one legitimate theatre responded that they did not know. Among those that saw an increase, the gain was commonly thought to be in the 5-10 percent range.

**Chart 3.29**  
**Anticipated Change in Business from Completed vision42 by Business Type**



## 4. Economic Impacts of LRT Systems Elsewhere

The term "light rail" came into being in 1972 when the United States Urban Mass Transit Association described new streetcar transformations which were taking place in European and American cities. The American Public Transportation Authority defines light rail as: "An electric railway with a 'light volume' traffic capacity compared to heavy rail. Light rail may use shared or exclusive rights-of-way, high or low platform loading and multi-car trains or single cars."<sup>1</sup>

Light rail transit systems use less infrastructure, have less passenger capacity and equipment than a rapid rail or subway system. Additionally, they are much cheaper to build and maintain than heavy rail systems.

They are also catalysts for economic development. Systems can cause an increase in property taxes, income, employment, and public health. Transit-oriented developments (TOD) have become very popular; people are expressing the need for more walkable communities in which to live and work. There have been numerous studies that prove that property values increase the closer they are to transit. For example "The New Transit Town: Best Practices In Transit-Oriented Development" by Reconnecting America provides an analysis of the real-world factors determining the success of TOD projects.



NJ Transit, Houston, & Amsterdam LRT (Source: American Public Transportation Association, CNN, & City Transport)



<sup>1</sup> The American Public Transportation Authority Glossary of Transit Terminology.

## 4.1 United States

As of September 2006, there were 20 LRT systems and over 30 LRT systems proposed in the United States.<sup>2</sup> Building light rail transit in the United States has been an uphill battle compared with European countries. Americans have not been as open as Europeans to the idea of LRT systems in their cities.

However, the idea of walkable, mixed-use environments around public transit has been gaining a footing because proposed transit projects are more likely to win highly competitive federal funds if they can show how well they mesh with existing subway, light rail and commuter train systems. The table below shows statistical data for 22 cities with existing or proposed LRT systems in the United States. Population change, retail, restaurants, hotel, & theater sales change, retail, restaurants, hotel, & theater sales change per capita, ridership change, and retail, restaurants, hotel, & theater sales per capita (2002) are listed below from 1997 to 2002.

**Table 4.1**  
**Statistics for 22 Cities with LRT Systems from 1997 to 2002**

City	Population Change	Sales* Change	Sales* Change per Capita	Ridership Change	Sales* per Capita (2002)
Baltimore	-3.26%	-8.93%	-5.86%	29.88%	\$ 6,891.80
Boston	5.31%	19.56%	13.54%	10.09%	\$ 14,436.94
Buffalo	-5.55%	11.25%	17.78%	-16.21%	\$ 6,490.39
Charlotte	16.13%	19.52%	2.93%	n/a	\$ 18,251.28
Cleveland	-6.49%	-9.62%	-3.35%	-42.71%	\$ 6,616.05
Dallas	13.67%	-1.23%	-13.11%	72.27%	\$ 13,635.93
Denver	11.68%	10.14%	-1.38%	135.53%	\$ 15,357.12
Houston	10.78%	5.83%	-4.47%	0.00%	\$ 14,968.53
Jersey City	3.29%	2.96%	-0.32%	n/a	\$ 6,380.59
Los Angeles	6.21%	16.73%	9.90%	43.90%	\$ 9,740.42
Memphis	10.13%	5.97%	-3.78%	146.50%	\$ 12,824.23
Newark	3.56%	2.83%	-0.71%	8.72%	\$ 5,202.96
Philadelphia	2.42%	2.76%	0.33%	-9.01%	\$ 7,628.90
Pittsburgh	-5.06%	18.50%	24.82%	0.84%	\$ 13,830.65
Portland	6.87%	-1.26%	-7.60%	170.82%	\$ 15,280.86
St. Louis	0.80%	12.82%	11.92%	1.34%	\$ 11,102.07
Salt Lake City	5.90%	-9.05%	-14.11%	100.00%	\$ 21,110.68
San Diego	4.60%	23.35%	17.92%	39.08%	\$ 13,949.16
San Francisco	2.83%	11.45%	8.38%	30.38%	\$ 16,765.48
San Jose	5.23%	15.78%	10.02%	15.77%	\$ 11,495.00
Seattle	6.87%	26.96%	18.80%	n/a	\$ 19,356.73
Tacoma	12.06%	17.25%	4.64%	n/a	\$ 14,316.10

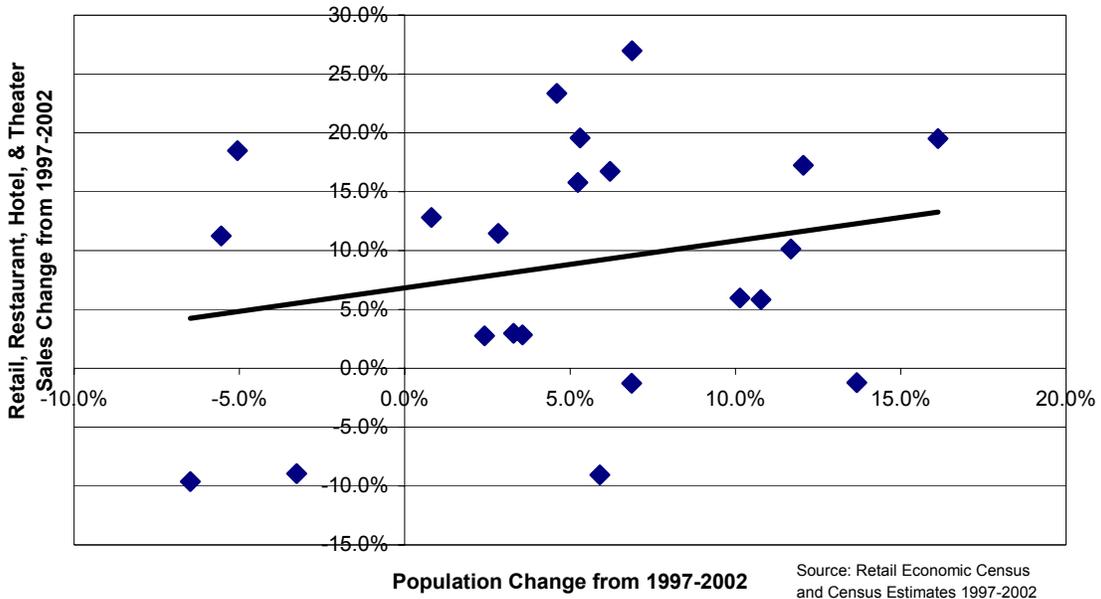
\*Sales= Retail, Restaurants, Hotel, & Theater sales

Data: Retail Economic Census, Population Estimate Census, NTD Ridership Data, 1997-2002

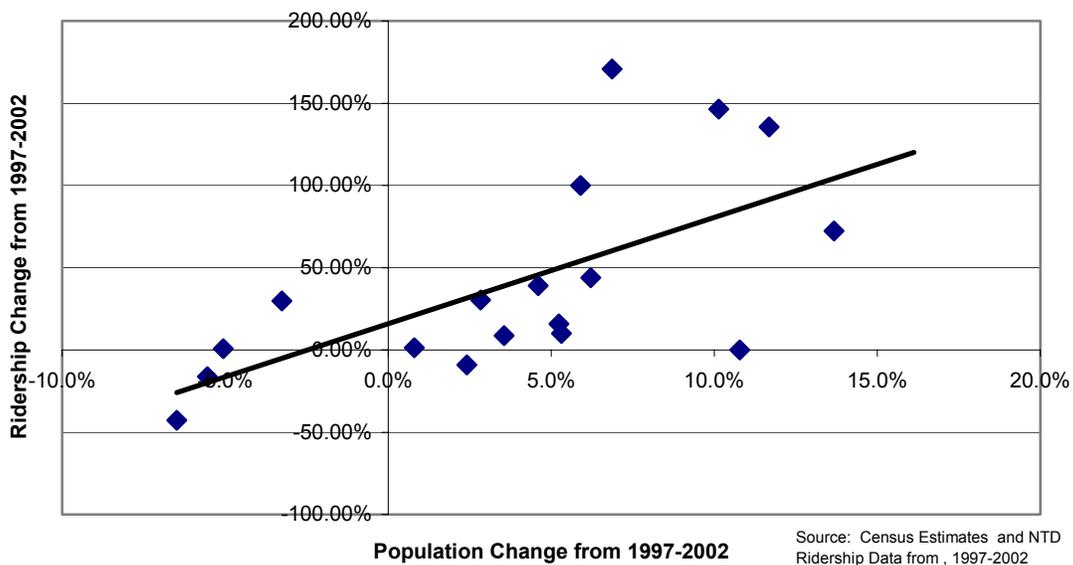
<sup>2</sup> American Public Transportation Association Website; [www.apta.org](http://www.apta.org).

As seen in the two graphs below there are positive correlations between the relationship between percent change in population and sales and the relationship between percent change of populations and light rail ridership from 1997 to 2002. As the population increases the sales and ridership of the LRT increases as well, although the increase is slightly greater when comparing population with ridership then with sales. Sales data was compiled by combining retail, restaurants, hotel, and theater sales.

**Chart 4.1 Relationship Between Percent Change in Population and Sales from 1997 to 2002 in 22 U.S. Cities**

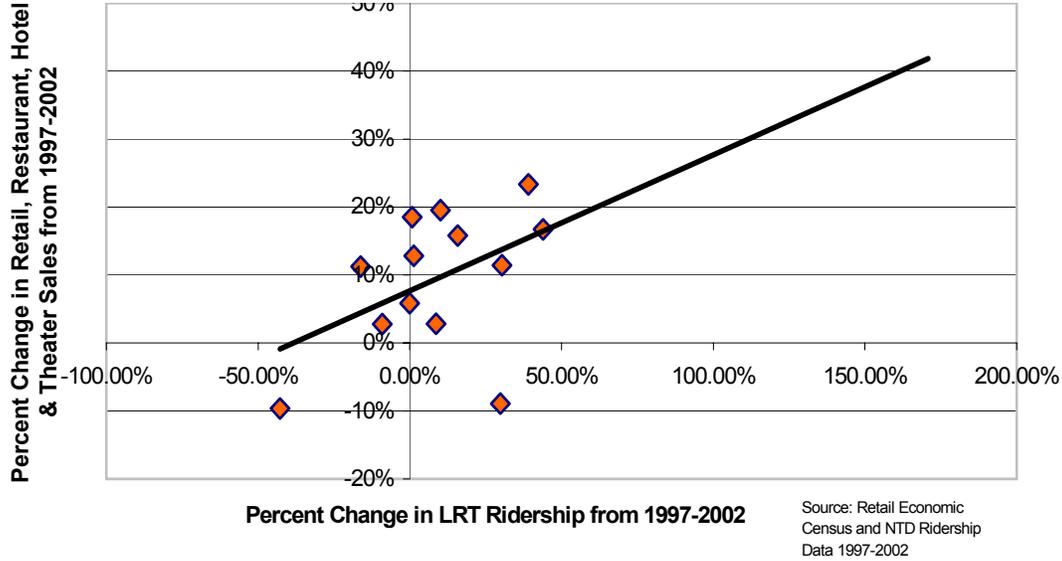


**Chart 4.2 Relationship Between Percent Change of Populations and Ridership 1997 to 2002 in 22 U.S. Cities**

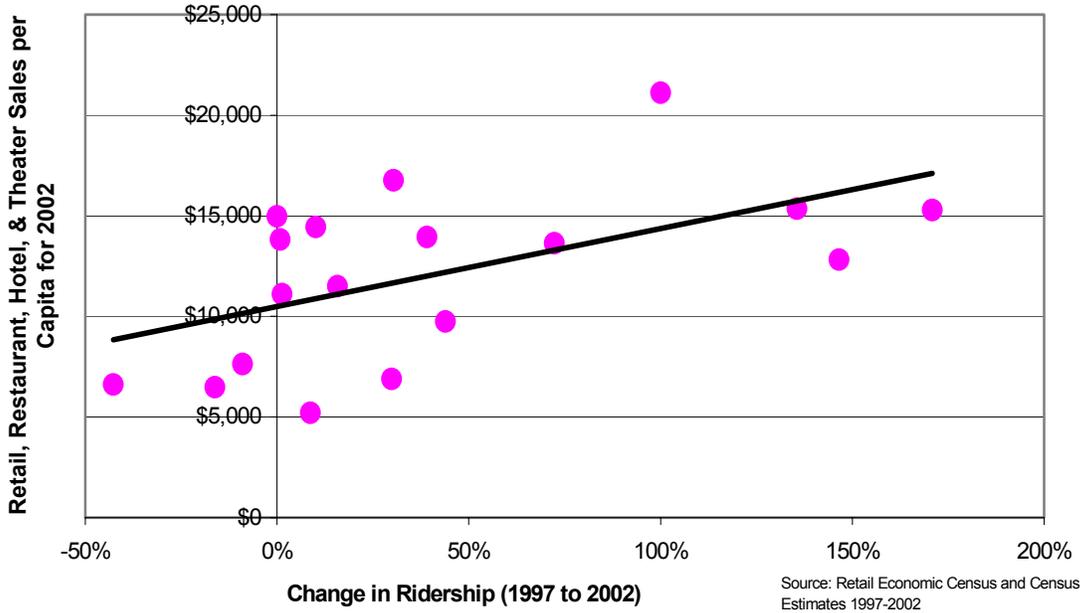


As seen in the two graphs below there are also positive correlations between the relationship between percent change in ridership and sales and relationship between percent change ridership and sales per capita (2002) from 1997 to 2002. As the ridership increase, sales and sales per capita increase as well. The increase is greater then the two graphs above on the previous pages. Outliers were omitted due to a ridership increased over 50 percent during the five years. Dallas, Denver, Memphis, Portland, and Salt Lake City were omitted. From 1997 to 2002, the five LRT systems experienced major extension projects to their systems to cause an extreme increase in ridership.

**Chart 4.3 Relationship Between Ridership and Sales from 1997 to 2002 in 17 U.S. Cities**



**Chart 4.4 Relationship Between Change in Ridership and Per Capita Retail and Restaurant Sales in 17 U.S. Cities**



Following are descriptions of key aspects of LRT systems throughout the United States and Europe. Where possible, the literature has been supplemented by responses received from the **vison42** Transit Agency Survey<sup>3</sup>. (Appendix C.)

## **Baltimore**

The Baltimore light rail opened initially in 1992 with a 25-mile, 2 line system. As of August 2006, when a double track opened, there are 32 stops. The Light Rail travels from Baltimore County's Hunt Valley corporate, hotel, and retail centers, to Downtown Baltimore's shopping, sightseeing, dining, and entertainment districts. It continues past Oriole Park and M&T Bank Stadium at the Camden Yards Sports Complex to Cromwell Station/Glen Burnie in Anne Arundel County. There is also service to Baltimore-Washington International Airport and Amtrak's Baltimore Penn Station.

The proposed red line will improve service from the high demand east-west corridor, enhancing the connection between the surrounding communities and downtown. The line will help communities become better places to live/work/shop, will support their economic development, and will encourage them to incorporate TOD planning early. Nevertheless there are community concerns about adverse impacts to small businesses, like loss of parking. The Red line's realistic delivery date will be 2010.



Baltimore LRT to BWI Airport  
(Source: Soul of America Website)

Even though the city's population and the retail service and food sales per person decreased respectively, by 3 to 6 percent from 1997 to 2002, the number of retail establishments in the CBD increased by 4.3 percent. The annual light rail ridership also increased, but by 29 percent during those five years. In 2005 however, the ridership decreased 40 percent from the 1997 total from 6,771,468.<sup>4</sup>



Baltimore LRT to Camden Yards  
(Source: Ernest H. Robl)

The light rail services the sport complexes in downtown Baltimore and has consequently replaced several bus lines. The Baltimore Orioles Stadium is served by the Blue and Yellow Lines. At the first exhibition game, approximately 35 percent of those attending arrived by public transportation. After the introduction of light rail services, tourism at the stadium increased by 3.8 percent in 2005, to 11.8 million visitors. \$425.9 million in cultural investments planned for 2004 to 2008 are facilitating the revival and expansion of cultural attractions downtown and helping drive tourism. Construction of a 750-room, \$305 million convention center hotel in Baltimore's Westside in

<sup>3</sup> Phone conversations, email exchanges and surveys were conducted with a promise of anonymity, only the general title of the respondent is listed.

<sup>4</sup>National Transit Database Ridership Data from 1997-2002.

early 2006 is expected to further strengthen the hospitality market.<sup>5</sup>



Baltimore LRT at Howard Street  
(Source: Downtown Westside Website)

The Maryland Transit Administration stated that during the construction phase of the project there was a moderate to high disruption of the retail market in the downtown area.<sup>6</sup> This consisted of the displacement of retail sales and restaurants, a subsequent decline in sales, and a minimal decline in commercial rents.<sup>7</sup> Despite the disruption caused by construction, new development was undertaken during that time period. In 2001, a \$15 million office/retail complex was built on 6 acres at Howard Street and MLK Blvd; 80 percent has since been leased. This is important because much of the area along the LRT had empty stores at the time of construction.<sup>8</sup>

A 2004 report from the Center for Transit-Oriented Development stated that in the Baltimore metro area, emerging transit-centered developments have the potential to handle nearly a quarter of the household growth projected over the next two decades.<sup>9</sup>

Although there was a decrease in ridership in 2005, the downtown area seemed to flourish along the light rail system. The Maryland Transit Administration confirmed some minimal new development has gradually begun in proximity to the light rail alignment in the downtown.<sup>10</sup> This has contributed to Baltimore's 2005 ranking as one of the nation's top ten healthy downtowns.<sup>11</sup> In 2005, the downtown area saw the completion of \$551 million in new development projects, on top of 2004's \$668 million investment.<sup>12</sup> At the end of 2005, new development projects worth \$722 million were under construction and projects valued at \$2.34 billion were in active planning stages for 2006-2008. The formerly purely business-oriented "single-use" downtown is also transforming into a mixed-use neighborhood. In 2005, 980 housing units were planned, while more businesses moved to the Downtown (286) than moved out (228), with a net gain of 58 new businesses.<sup>13</sup>

As of August 2006, the central business district is experiencing a revival. National retail chains such as Office Depot, Starbucks, and Best Buy are moving into the downtown area. New hotels such as the Marriott, which opened with 185 rooms and high occupancy, are also locating along the light rail in downtown. Currently, three new hotels are under construction, adding 460 hotel rooms to the downtown. Hotel

<sup>5</sup> 2005 State of Downtown Baltimore Report issued by the Downtown Partnership Downtown Baltimore, 2005.

<sup>6</sup> 2006 Urbanomics Transit Agency Survey.

<sup>7</sup> 1997-2005 Economic Census.

<sup>8</sup> 2006 Urbanomics Transit Agency Survey.

<sup>9</sup> Lorraine Mirabella, "Mass transit has new curb appeal, Proximity to transit attracts homebuyers to urban developments," Baltimore Sun, January 15, 2006.

<sup>10</sup> 2006 Urbanomics Transit Agency Survey.

<sup>11</sup> 2005 Retail Market Assessment.

<sup>12</sup> 2005 State of Downtown Baltimore Report issued by the Downtown Partnership Downtown Baltimore, 2005.

<sup>13</sup> 2006 Urbanomics Transit Agency Survey.

occupancy is greater than 70 percent; with room rates up to \$167 per night. In 2005, new companies and organizations located in the Downtown expanded. Many small businesses purchased their own buildings instead of renting to capitalize on increasing market value.<sup>14</sup>

The light rail system in Baltimore has not only been a catalyst for development in the downtown area, but also has created a strain on the residential population. With new developments come higher rents and therefore an increase in the cost of living in the newly "gentrified" area. The Department of City Planning stated that the current residents couldn't afford the increasing rents.<sup>15</sup>

Outside of the CBD, development along the light rail alignment has been hit or miss with the exception of the large business campuses like the ones at Hunt Valley or Woodberry Station. In the recently revitalized Hunt Valley, restaurants, movie theaters, hotels and shopping centers, which were built to accommodate business travelers, provide many resources for locals and out-of town visitors. The Hunt Valley Towne Centre, revamped in 2005, is also the only mall with a LRT station. Meanwhile, the southern section of Baltimore is characterized by pre-war residential development with less opportunity for LRT-related commercial growth.

## **Boston**

Boston's subway system, known as the "T", consists of four transit lines, two are rapid transit, one is light rail, and one is both rapid and light rail. The light rail line is known as the Green Line and, while the Red Line is primarily a "heavy," fully grade-separated, rapid transit line, an unusual LRT branch of the Red Line also exists – the M Line (Mattapan-Ashmont High Speed Trolley), which runs 2.6-miles from Ashmont to Mattapan, with 8 stops. As of July 2006, this service uses twelve refurbished PCC cars and accommodates about 7,000 rider-trips a day.<sup>16</sup>



Boston Green LRT Line  
(Source: Light Rail Now Website)

The Green line consists of 25.6-miles, 70 stations and 183 cars.<sup>17</sup> The Green Line system currently has 4 branches, designated by route letters and with terminal points as follows: B-Boston College to Government Center, C-Cleveland Circle to Government Center, D-Riverside to Lechmere, and E-Heath Street to Lechmere. The "T" is quite distinctive, having been designed for trolleys, twisting around Boston's (heavy regional and intercity railway) North Station and into the central LRT subway through downtown.<sup>18</sup>

In 2002, the annual LRT ridership was 73,762,92, a 10 percent increase from 1997. As of July 2006, Boston's light rail transit had the heaviest LRT ridership in the United States. Furthermore, in unit operating cost, Boston's LRT is significantly less costly than the city's bus services. According to the Federal Transit Administration's 2001 National Transit

<sup>14</sup> 2005 State of Downtown Baltimore Report issued by the Downtown Partnership Downtown Baltimore, 2005.

<sup>15</sup> Maryland Department of Planning; [www.mdp.state.md.us](http://www.mdp.state.md.us).

<sup>16</sup> Boston: Light Rail Transit Overview, Light Rail Progress, [www.lightrailnow.org](http://www.lightrailnow.org), May 2003.

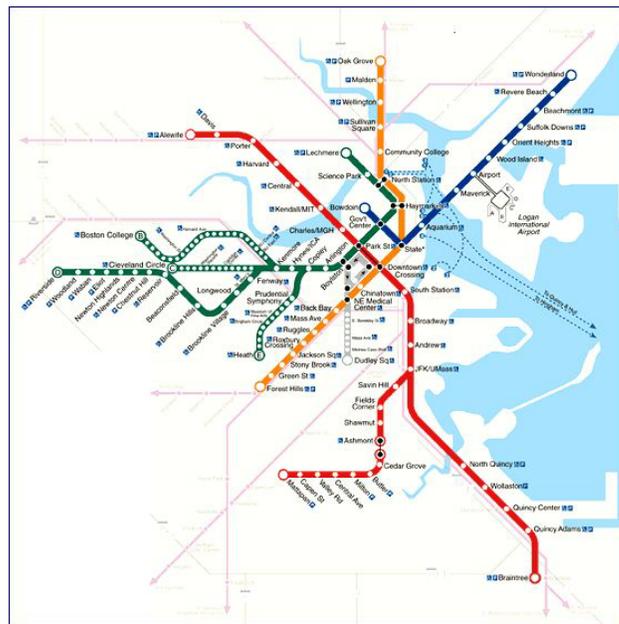
<sup>17</sup> MBTA Draft Capital Investment Program FY06-FY11.

<sup>18</sup> Boston: Light Rail Transit Overview, Light Rail Progress, [www.lightrailnow.org](http://www.lightrailnow.org), May 2003.

Database, the Massachusetts's Bay Transportation Authority's LRT system carried passengers at an average cost of \$1.25 per trip and \$0.51 per passenger mile, compared with MBTA average bus costs of \$2.04 per trip and \$0.71 per passenger-mile.<sup>19</sup>

The MBTA has been proactive in forming equity partnerships interested in developments that incorporate transit. Residential land uses are located throughout the Arborway corridor, in Jamaica Plains. The highest concentration occurs on South Huntington Avenue, South Street, and on the side streets of the corridor.

There are also commercial districts on Centre and South Streets, along the LRT route. Retail sales and food service per person have increased by about 13 percent from 1997 to 2002. For the CBD, the number of business establishments decreased by 2.6 percent, for those same years. Small-scale retail stores are concentrated on Centre Street between Green and Elliot Streets. In Cambridge, the city and the MBTA negotiated with the developer of Cambridge Side Galleria, an urban mall, to run shuttle buses from the 2 "T" stops at Kendall Square and Lechmere Square (off the LRT).



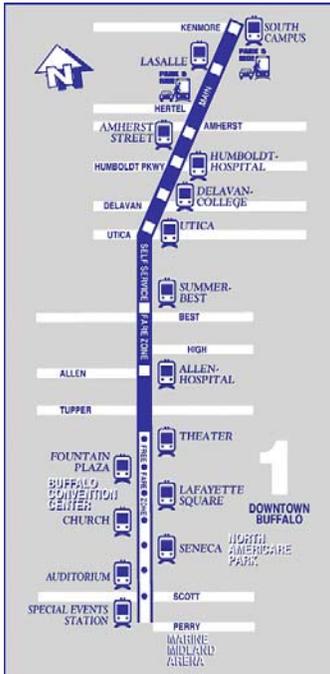
Boston Metro & LRT System  
(Source: Light Rail Now Website)

The Boston LRT serves several universities and colleges as well as tourist attractions. Both Boston College and Boston University are stops on the T's Green Line. In addition, the E-Heath Street LRT line serves Northeastern University, and there is a turnback by campus buildings, which serves the Fleet Center by the elevated Green Line at North Station. Additionally, tourists can use the light rail to visit Fenway Park, Copley Square, Haymarket, and many museums.

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<sup>19</sup> Ibid.

## Buffalo



Buffalo LRT System Map  
(Source: Light Rail Website)

Buffalo's light rail opened in 1985 as one line with a 6.25-mile route, including 4.8-miles in a tunnel from downtown to the suburbs. The light rail route follows most of Main Street, from the HSBC Arena downtown to the south campus of the University of Buffalo in the northeast corner of the city. The system operates 27 cars with 15 stops along the route. Along the Main Street Mall is a traffic-free area at the heart of the city's central business district, which stretches about a mile. Service is fare-free in this area between the theater and special events stop.

When the Metro Rail began construction, it was intended to be the first line of an extensive system that would spread throughout the city and suburbs. However, during and after construction of the line, Buffalo became a significantly less densely populated city.

The 1980s saw a significant decline in the area's economic situation in general, reducing both the number of potential passengers and the tax base available to fund the system. The construction of the pedestrian auto-free mall along Main Street downtown coincided with the fall of most of downtown's retail shops. As a result, the downtown section

and indeed much of the light rail line lost most of its retail anchor at the south end, and many saw the train as being responsible for the economic decline of Downtown. All major department stores in the downtown area went out of business and many smaller shops closed or relocated to suburban malls. From 1997 to 2002, the population decreased by almost 6 percent. As a result, the new line's ridership was much lower than originally anticipated, decreasing by 16 percent. Moreover, the cost of the urban section of the light rail was so high that no funding was available to continue the project. For example, the light rail was not extended to the Amherst campus of the University of Buffalo.

At the end of the route is the Buffalo Memorial Auditorium, known as "The Aud." The Aud had been the center of Buffalo's entertainment, but was closed by 1996. In November 2004, Bass Pro Shops announced they had agreed to convert the historical auditorium into a Bass Pro Outdoor World store of approximately 250,000 square feet, which will anchor a development that also includes a museum/interpretive center, a hotel and a themed full-service restaurant. The store is tentatively scheduled to open in 2007. The \$123 million project is being viewed as the catalyst



Buffalo's Historical Aud  
(Source: Hockey Forums Website)

for a new surge of development along the lower Main Street/Inner Harbor area that includes a transportation center and specialty shops.<sup>20</sup>

From 1997 to 2002, although retail sales and food service per person increased by almost 18 percent, in the CBD, the number of establishments decreased by 7.6 percent. In the light of the city's economic situation, Buffalo is planning to reintroduce cars to the transit mall by reducing the width of the sidewalks and providing traffic and parking lanes for vehicles. The project is expected to be completed by 2007.<sup>21</sup> In 2006, there were about 6.3 million square feet of class A & B office space located Downtown with more than 1100 businesses, 90 restaurants, and 85 retail stores.

## **Charlotte**

Charlotte Area Transit System (CATS) is in the process of building a state-of-the-art transit system, which will integrate bus, LRT, commuter rail & BRT into a unified network. On February 26, 2005, construction of the first segment began and on completion will be 9.7-miles with 15 stations and a fleet of 16 vehicles. The line will extend from central Charlotte to the Interstate 485 expressway, parallel to South Boulevard. Part of the line will use an abandoned Norfolk Southern Railroad right of way and part will run alongside tracks that will remain in freight service. The Charlotte Trolley, a heritage streetcar, already uses the right of way between central Charlotte and Tremont Avenue and will share tracks with the light rail trains.

In 2005, it became clear that the Southeast Corridor community favored the LRT over the officially favored, and less expensive, BRT option. The BRT was already operating on HOV lanes through the corridor, carrying about 20,000 riders a month. The projected total cost for the LRT is \$427 million, or about \$44 million per mile. The projected startup date is in 2007. Local planners predict the initial ridership to be 9,100 a day when the starter line opens, with ridership doubling by 2025.<sup>22</sup>



The Planned LRT and Arena (Source: Sports Venue Technology Website)

CATS has been involving the community in the light rail planning process by inviting them to offer input and feedback on the South Corridor Light Rail Project in public meetings. Since 2000, CATS has held approximately 50 public meetings with over 2,400 attendees. Many project decisions have been influenced by input and feedback received during these public meetings including: alignment options, station locations and shelter design, light rail vehicle body shape and amenities, uptown stations design, Archdale Station's grade separation, and the location of the I-485 parking garage.<sup>23</sup>

<sup>20</sup> James Fink, "Developer has designs on Aud as anchor for Bass Pro," Business First of Buffalo, December 6, 2002.

<sup>21</sup> "Return of Vehicular Traffic to Main Street," [www.buffaloplac.com](http://www.buffaloplac.com).

<sup>22</sup> Unknown Author, "Charlotte: Modern light rail project breaks ground, moves into major construction," April 23, 2005, available on [www.lightrailnow.org](http://www.lightrailnow.org).

<sup>23</sup> Charlotte Area Transit System website.

The light rail is a response to the area's rapid growth in population. From 1997 to 2002, the city's population grew by almost 17 percent. The population is expected to reach 900,000 in 2010 and 1.1 million in 2020.<sup>24</sup> Retail sales and food service per person increased by 3 percent from 1997 to 2002, while the number of establishments in the CBD also increased by almost 20 percent.

The light rail will serve the central business district and provide connectivity to surrounding communities and institutions. New apartment buildings, condos, and restaurants are already being built with the light rail line as the focus. For example, Crescent Resources expect to start work in summer 2006 on 420 residential units, about 25,000 square feet of retail and 10,500 square feet of office space in a project called "C."<sup>25</sup> Jim Smith, the Vice-President of the company's multifamily development division, stated, "Crescent wouldn't be developing this site if weren't for light rail."<sup>26</sup>

Transit planners are encouraging property owners to build high-density housing around 15 stations planned between uptown Charlotte and Interstate 485. About 1,500 units, including Crescent's residential, retail and office units, are proposed, and about 180 acres of land, which could be redeveloped roughly between the middle of South End and Scaleybank Road, is in play.<sup>27</sup> Also, as the population grows in the region, so does tourism. The light rail will serve patrons of the Bank of America Stadium and Charlotte Convention Center.

The city of Charlotte hopes that development of light rail will justify the expense by generating new tax revenues. Already, even just the promise of light rail has been making a difference. CAT's officials say that the tax value of properties in South End has increased by 89 percent from 2001 to 2004.<sup>28</sup>

## **Cleveland**

Greater Cleveland Rapid Transit Authority (RTA) consists of four transits lines: the Red (rapid transit), Blue, Green, and Waterfront (LRT). The Waterfront Line intersects with the Blue and Green lines and serves the Warehouse District, Flats entertainment district, and other attractions along the north coast, including the Cleveland Browns stadium, the Rock & Roll Hall of Fame and South Harbor Station. (Loop bus service runs throughout the Central Business District, which covers the heart of Cleveland from the Galleria to Tower City).

The Blue Line and Green Line are known as sister lines and travel between Tower City and Shaker Square, where they branch off. The Blue Line goes to Van Aken Boulevard and the intersection of Warrensville Road. The Green Line heads down Shaker Boulevard to Green Road. The Waterfront Line is an extension of the Blue and Green Lines and begins at Tower City. From there, it travels along the East Bank of the Flats to the South Harbor Station in the Municipal Parking Lot. There are a total of 29 stops between the four lines.<sup>29</sup>

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<sup>24</sup> Charlotte Observer, Feb. 27, 2005.

<sup>25</sup> Doug Smith, "Light rail draws development to South End, Mixed-use project will add residences, retailers," Charlotte Observer, Feb. 2006.

<sup>26</sup> Ibid.

<sup>27</sup> Ibid.

<sup>28</sup> Ibid.

<sup>29</sup> New York City Subway Resources Website; [www.nycsubway.org](http://www.nycsubway.org).



Cleveland LRT System Map  
(Source: USGS topos)

The light rail serves Cleveland Business Park, the NASA/Glen Research Center, the central business district (the region's largest employment area), the University Circle area (the second largest employment area), the Cleveland Browns, the Rock & Roll Hall of Fame, the Gateway Arena (sports facility), and the Baseball Stadium.

The Rapid Transit Authority's 2005-2009 Capital Improvement Plan envisions extending two of the LRT lines. The Waterfront Line extension will include service to the CBD and Lakefront areas. This extension is intended to improve downtown access to RTA's rail system in downtown Cleveland by finishing the "loop," started in 1996 to help establish a more effective downtown transit system.

The Blue Line extension will serve the Chagrin Highlands development areas. It would be about 2 miles in order to improve access for citizens to new jobs being located around the 600-acre area. The city is working with property owners to plan a transit-oriented development along this route.<sup>30</sup>

From 1997 to 2002, Cleveland's population decreased by 6.5 percent. Meanwhile, retail sales and food service per person decreased by 3 percent and the number of establishments in the CBD dropped by 8.4 percent. Consequently, it is no surprise that the ridership of the LRT decreased by 40 percent from 1997 to 2002. Since then however, in 2003 and 2004, RTA reported growth in ridership.<sup>31</sup>

Reinvestment in the downtown business area in the mid-1990s stimulated a revival that continues to this day, with over \$2 billion in capital projects slated to involve the downtown area over the next few years.<sup>32</sup> There are several new developments, both residential and commercial, planned for downtown.

Cleveland's LRT serves the redeveloping downtown of Tower City. The Tower City Complex has converted the old Terminal Towers into a retail, hotel, and entertainment center with over 115 retail shops, two upscale hotels, and two theaters. City planners stated that the complex is doing quite well, even too well; it has dried up retail in surrounding areas such as the Galleria.<sup>33</sup>

<sup>30</sup> The Regional Transportation Authority; www.gcrta.org.

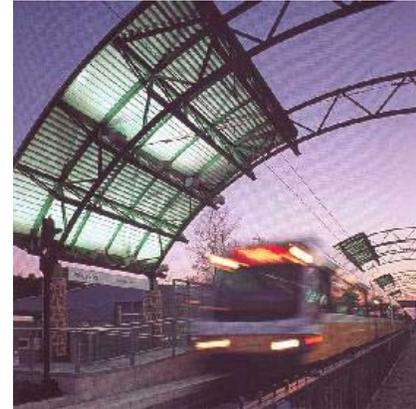
<sup>31</sup> Ibid.

<sup>32</sup> Brookings Institution, Study of American Downtowns, 2005.

<sup>33</sup> University of Michigan, "Tower City-A Case Study on a Downtown Re-Development."

## Dallas

Dallas light rail was first opened in 1996 as part of the Dallas Rapid Transit System (DART). It consists of 44.4 miles of rail along 2 lines. The red and blue lines feature 35 stations located in downtown Dallas, South Oak Cliff, West Oak Cliff, the North Central Expressway Corridor in North Dallas, Richardson and Plano, and along the Northeast Corridor to Garland. The initial route opened in 3 stages from 1996-97; first linking Park Lane in the north with central Dallas, and branching south as the Red and Blue line. In 2002, DART opened an extension with 7 new stations, 4 in North Dallas, and 3 in Richardson. These extended the Red Line by 8.7-miles: Park Lane to LBJ Central, Spring to Galatyn. The Blue and Red Line expansions were also completed in 2002, the Blue added 2 stations while the Red Line expansions extended service to Downtown Plano. In 2004, the Victory Station in Downtown Dallas was opened, which is the first of two new stations planned for 15 miles of new northwest corridor light rail expansion. The Victory Station will support commuter rail access.



New Light Rail in Dallas  
(Source: New Trains Website)

With the increase in ridership of 72 percent from 1997 to 2002, expansion projects for the light rail are currently under construction. As of August 2006, the light rail is going through a 27-mile expansion project in the southwest and southeast corridors of the route. The Dallas Rapid Transit System is also in the planning stages of another expansion to Irving and the Dallas Fort Worth International Airport.

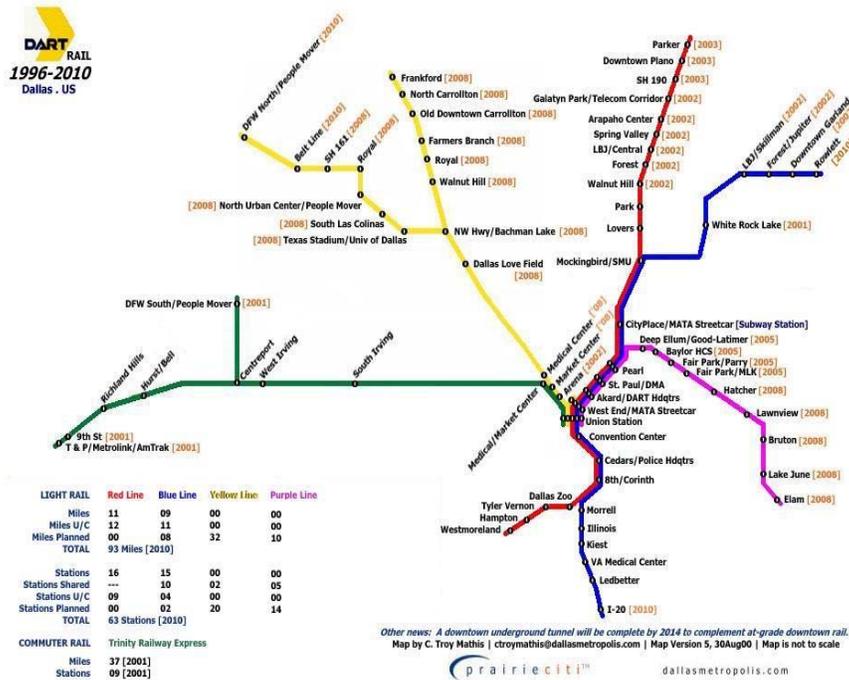
Unlike the city of Dallas's population, which increased by 13 percent from 1997 to 2002, its retail sales and food service per person has decreased by 13 percent over the same time period. But the number of retail establishments in the CBD has increased by 4.3 percent from 1997 to 2002. Additionally the Dallas light rail has been a catalyst for real estate development along its route. Through early 2000, more than \$800 million in private funds have been invested in development along DART's \$860-million, 20-mile Light Rail starter system. Throughout the DART service area, investors and developers are following DART rail lines for the fastest track to lucrative developments.<sup>34</sup>

Even before the opening of the light rail, but after the announcement, Dallas saw a great deal of development along the proposed route. A planner from the Dallas Rapid Transit System noted that a few development sites were assembled along the route at this time. He also stated that new establishments such as retail, residential, hotel, and entertainment facilities were being built during this time. Results were mixed when it came to the impact of the announcement on property values in the Downtown; he noted that there was both a slight increase in property values and a moderate decrease in property values. There were also some changes in [retail stores, restaurants and hotels, and a decline in business sales and rents].<sup>35</sup>

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<sup>34</sup> "Dallas Light Rail Sparks Development Boom," April 2000; [www.lightrailnow.org](http://www.lightrailnow.org).

<sup>35</sup> 2006 Urbanomics' Transit Agency Survey.



During the construction phase, the LRT did not trigger much development. It did cause a slight shift in move-out of retail stores, restaurants, and hotels, and but there was no decline in business sales or rents from the construction of the LRT. When the light rail service was in operation, Dallas saw an improvement in the downtown area.<sup>36</sup> One can assume that light rail was a catalyst for the new development, but it could also have been triggered by the economy, which was and currently is on an up swing.

Since the opening of the LRT in 1996, headquarters and company offices started to become attracted to the central business district; for example, KPMG, Baker Botts LLP and Omnicom Group all relocated near the St. Paul Station stop. In the past, companies had moved outside of the CBD because of lack of parking.

In 1999, a University of North Texas study for DART on the system's economic impact found the jump in valuations around DART stations to be about 25 percent greater than in control neighborhoods. Also, it determined that the LRT might have positively impacted retail sales in the Dallas CBD, which experienced much stronger retail sales growth (36.2 percent) after DART's LRT had gone into service.<sup>37</sup>

Private developments near completed or planned light rail stations were greater than \$1 billion in 2001-02. Office property next to stations increased in value by 53 percent more than comparable property not near the rail line and residential property next to stations increased in value by 39 percent more than comparable property not near the rail line.<sup>38</sup>

In 2003, the Gables Residential Company converted the 36-story historical Republic Bank into 220 high-end rental apartments.<sup>39</sup> Other historical conversions are taking place downtown, such as Hamilton Properties' restoration of the landmark Dallas Power and Light building into a mixed-use development of residential and retail space.<sup>40</sup>

<sup>36</sup> 2006 Urbanomics Transit Agency Survey.

<sup>37</sup> Bernard L. Weinstein et al., "The Initial Economic Impacts of the DART LRT System," University of North Texas, July 1999.

<sup>38</sup> Dallas Area Rapid Transit, "DART Rail spurs Economic Vitality; creative developments," December 16, 2005.

<sup>39</sup> Steven Brown, "Downtown spot may be home to new apartments, Gables seeks to convert vacant Republic Bank Building into complex," The Dallas Morning News, August 5, 2003.

<sup>40</sup> Dallas Area Rapid Transit, "DART Rail spurs Economic Vitality; creative developments," December 16, 2005.

In 2005, DART LRT was reported to be a significant factor in persuading major companies to locate their headquarters downtown. The Dallas Morning News reported that the architecture firm Corgan Associates planned to build a new corporate office in downtown Dallas's West End district – once a run-down warehouse area, but now a vibrant center of upscale restaurants, shops, and offices serviced by DART's West End LRT station. Corgan is the third company this year – along with Hunt Consolidated Inc and 7-Eleven Inc – to announce plans to build its headquarters downtown.<sup>41</sup> In addition, upscale restaurants in the West End have been seen a 36 percent increase in sales since the LRT was built.<sup>42</sup> The west end is often chosen because of its easy access to DART's LRT and other amenities in the entertainment district.

Transit-oriented developments are also being built along the LRT. A mixed-use, urban "chic" village, 4 miles north of downtown Dallas, is linked directly to the Mockingbird LRT station via a welcoming pedestrians bridge. This assemblage of offices, shops, restaurants, and lofts cost about \$145 million to build, a considerable sum given that such a "product" has no history in Texas.<sup>43</sup>

New developments at other rail stations include retail and tourist establishments; for example, the project located at the LRT station near SMU includes entertainment, dining, high-end retail, and housing. The Adam's Mark Hotel, located adjacent to the Pearl LRT station, and represents an investment of more than \$150 million by HBE CORPORATION.<sup>44</sup> This is the most expensive real estate project in the central business district.

The zoo, on the Red Line south of downtown, has seen a 60 percent increase in attendance since the trolleys began stopping there in 2000. Some of that has come from DART educational programs with special zoo fares.<sup>45</sup> Also, convention delegates use light rail to ride between downtown hotels and the Convention Center. Finally, so many fans of the Dallas Stars have been riding the rails to Union Station that extra cars are put on to get them to the hockey games at Reunion Arena.<sup>46</sup>

## **Denver**

As of August 2006, the Regional Transportation District (RTD) of Denver runs a 25-mile, 2-line light rail system known as "The Ride". The first segment (D Line) opened in 1994 and the Central Platte Valley Line (C Line) opened in 2001. In 1994, 29 bus routes were diverted to act as feeders, eliminating more than 500 movements through the CBD daily. When opened, the LRT was so popular that 10 bus routes into the CBD had to be reinstated to ease pressure on the LRT.<sup>47</sup>

The C Line (orange) travels from the Littleton/Mineral Station to the Union Station in Lower Downtown. There are 12 stations along this 13.75-mile line, which provide access to major entertainment venues (like the Colorado convention center, the Investor Field at

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<sup>41</sup> Dallas Morning News, 2005; www.dallasnews.com.

<sup>42</sup> Dallas Area Rapid Transit, "DART Rail spurs Economic Vitality; creative developments," December 16, 2005.

<sup>43</sup> Ibid.

<sup>44</sup> Ibid.

<sup>45</sup> David Anthony Richelieu, "Dallas light rail on a roll against the odds," San Antonio Express-News, April 17, 2000.

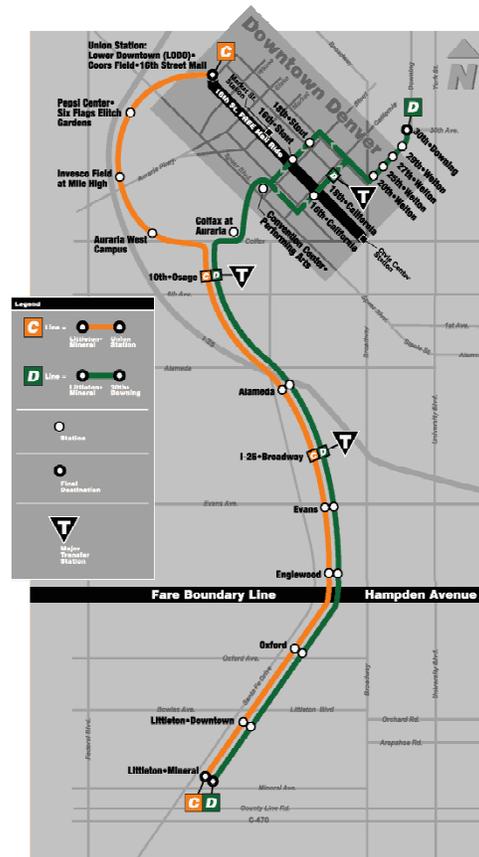
<sup>46</sup> Ibid.

<sup>47</sup> New York City Public-Science Industry and Business library.

Mile High Stadium, the Pepsi Center, and Six Flags) and universities such as the Community College of Denver's Auraria Campus.<sup>48</sup>

The D Line (green) travels from the Littleton/Mineral Station through Downtown Denver to 30th street and Downing Station in Five Points. There are 20 stations along this 13.75-mile line, all of which serve both northbound and southbound trains, except in Downtown Denver between 14th and 19th Streets. In that area, the northbound trains travel along California Street and the southbound trains travel along Stout Street.<sup>49</sup>

The Regional Transportation District is going through major upgrades. From 1997 to 2002, here was an 11 percent increase in population and a 135 percent increase in LRT ridership (the D line was opened in 2001). As of October 2005, RTD announced that public transportation carried its highest number of passengers in 30 years of operation – 85 million between September 2004 and 2005, a 3.7 percent increase over the 82 million of the previous year. Most of the ridership increase has been on regional bus routes, although all modes of public transport have seen gains. Higher fuel prices may account for some upsurge, but many passengers seem attracted to the convenience.<sup>50</sup> Based on this growth, Denver is considering building four new lines in addition to T-Rex opening later this year (2006).



Denver LRT System Map  
(Source: RTD Website)

Denver plans on opening the newly constructed Southeast Corridor Light Rail on November 17, 2006, a month ahead of schedule. The new line will expand the existing system's light rail and service along the southeast corridor of I-25 and I-225. The LRT line is being built as part of the \$1.67 billion Transportation Expansion Project, known as T-REX, on Interstate 25 and Interstate 225 in southeast metropolitan Denver. An extensive bus feeder system will make it easy for people to get to and from the 13 new light rail stations. The Southeast Corridor Light Rail will add 18.75 miles of LRT to the existing system, extending it from the current station at I-25 and Broadway along the west side of I-25 to Lincoln Avenue in Douglas County and in the median of I-225 to Parker Road in Aurora. It will also add 34 light rail vehicles to the fleet.<sup>51</sup>

The Southeast corridor connects the two major employment centers in the Denver metro area - the Denver CBD and the Southwest business district, which includes the Denver Tech Center, Greenwood Village, Interness, Meridian, and the city of Centennial (which

<sup>48</sup> Denver Regional Transportation district website; [www.rtd-denver.com](http://www.rtd-denver.com).

<sup>49</sup> Ibid.

<sup>50</sup> Denver Post, October 2005; [www.denverpost.com](http://www.denverpost.com).

<sup>51</sup> T-Rex Website; [www.trexproject.com](http://www.trexproject.com).

had 180,000 workers in 2003). In addition to the five points area north of downtown, property development is increasing around the LRT.<sup>52</sup>

The revitalization of Denver's once dilapidated downtown is attracting new commercial activity – particularly retail.<sup>53</sup> More and more Denver-area residents, employees and visitors have poured into the city center. Overall, retail sales and food service increased at a rate of 10 percent, but decreased per person by 1.4 percent from 1997 to 2002.

### **Denver's 16<sup>th</sup> Street Pedestrian Mall**

The Downtown Denver Partnership refers to the 16-block, I.M. Pei designed, 16<sup>th</sup> Street Pedestrian and Transitway Mall as the "retail core...[and] centerpiece of downtown Denver." The 16<sup>th</sup> Street Mall is also home to residential units, office buildings, hotels, and two regional transportation stations. Seating areas along the Mall's tree-lined median and adjacent to cafes and restaurants attract pedestrian activity year-round. In 2004, the 16<sup>th</sup> Street Mall ranked #1 in metro tourist attractions in a survey conducted by the Denver Metro Convention & Visitors Bureau. Access to Denver's LRT is a major contributor to this development, the ease of access to the entire length of the shopping district via free shuttle bus service is another. It is estimated that more than 60,000 riders board the 16<sup>th</sup> Street Mall's free shuttles each weekday, with increasing numbers on weekends and weekday evenings.

The latest financial institution to move to the city center is Minn's TCF Financial Corporation, which was previously confined to the Denver suburbs and Colorado Springs. In 2005, TCF opened a new branch on 16<sup>th</sup> and California Streets, across from the transit-pedestrian mall and a Washington Mutual branch that opened in 2003. The Denver Metro Convention & Visitor's Bureau information center is also located across the street from the new bank. TCF's Presidents noted that; "you place a retail outlet where the people are." The Bank of Denver is also making plans to establish a presence on the mall, while banks that once had a spot on the mall and left are seeking a way back.<sup>54</sup>



Denver's LRT Downtown (Source: Civitas)

As of February 2006, one of largest Transit Orient Development's was proposed in connection with the LRT in Denver. Westfield Development presented a plan for Lincoln Station, a \$750 million TOD next to the southernmost LRT station along Denver's T-REX corridor consisting of commercial (3 million square feet) and residential (1500 units) space. With this development project as the beginning, planners predict a great deal of TOD opportunities along T-REX.<sup>55</sup>

Further development projects include the I-15 and Broadway station, which is located in an old industrial area. The city is also trying to form an urban renewal district in the

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<sup>52</sup> Denver Post, February 2006; [www.denverpost.com](http://www.denverpost.com).

<sup>53</sup> Denver Post, November 2005; [www.denverpost.com](http://www.denverpost.com).

<sup>54</sup> Ibid.

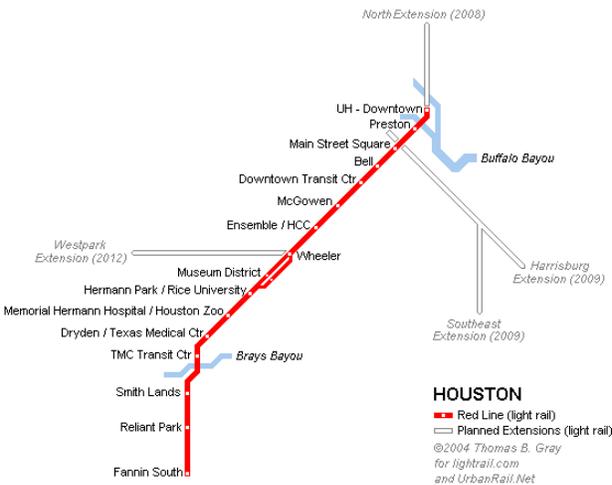
<sup>55</sup> Denver Post, February 2006; [www.denverpost.com](http://www.denverpost.com).

station area and plans to change the zoning to Planned Unit Development to facilitate mixed-use development. In addition, downtown development has been focusing on revitalizing historic buildings rather than new development.

## **Houston**

The Metropolitan Transit Authority of Harris County's METRO was created in 1978, partially funded by a one cent sales tax. In 1988, a \$2.6 billion, 13-year program of public transit improvements, which included transit centers, park & ride, bus shelters and transit ways, was implemented, funded by 25 percent of sales tax revenues.<sup>56</sup>

In 2001, METRO Solutions was developed as a comprehensive transit system in response to the Greater Houston area's traffic congestion, air quality problems, and increase in population (10 percent from 1997 to 2002). The plan for this system was developed with extensive input from the public, Metro's regional transportation partners and transportation experts nationwide. The plan, which was approved in November 2003, calls for major multimodal transit improvements across the region and will continue through the 2014 General Mobility Program, which sets aside one-quarter of Metro's one cent sales tax revenue for mobility projects in Harris County, the City of Houston and the Multi-Cities. In addition, voters granted METRO the authority to issue up to \$640 million in bonds to fund the next phase of projects.



Houston LRT System Map (Source: Light Rail Website)

include an eight-mile University line from the Uptown/Galleria and Greenway Plaza areas to the University of Houston and Texas Southern University, a one-and-a-half-mile extension of the existing Red Line north to a proposed Intermodal Facility, and 99 miles of other forms of non-LRT transportation (bus rapid transit, commuter rail transit, and bus service).<sup>58</sup>

The METRO Solutions plan calls for 67 miles of LRT with 16 stops, costing \$324 million. It will run from Fannin South to the Northern terminus at the University of Houston-Downtown. In 2004, Phase 1 of the METRO Rail Red Line LRT began service along a 7.5-mile route, from downtown to south of Reliant Park (the Astrodome football stadium). Its ridership was 39,500 on an average weekend in 2005.<sup>57</sup>

In June of 2005, METRO revealed its \$2 billion Phase 2 Implementation Plan to provide more rapid transit for the Houston region in less time than originally proposed under METRO Solutions. The plan envisions nearly nine miles of Light Rail Transit which will

<sup>56</sup> League of Women Voters of the National Capital Area Factsheet 2003. Regional Transportation Planning. [www.lwvalex.org/NCAtrans.pdf](http://www.lwvalex.org/NCAtrans.pdf)

<sup>57</sup> Metropolitan Transit Authority of Harris County's, transit survey.

<sup>58</sup> Houston's Ride Metro Website; [www.ridemetro.org](http://www.ridemetro.org).

Even before the opening of the light rail, but after the announcement, Houston saw a great deal of development along the proposed route. A vice president from the Metropolitan Transportation Authority noted that new establishments such as hotels were being built during this time at a moderate rate. He also noted that there was a moderate increase in property values in downtown Houston.<sup>59</sup>

During the construction phase, the LRT triggered many developments, including the Bayou Place, a major entertainment complex, and the Rice Hotel; other clubs and restaurants opened also downtown. During construction, the LRT had a moderate impact on the move-out of retail and restaurant establishments in the downtown area. Moreover, although not at a high rate, it also had a slight effect on the decline of sales of retail and restaurant space.<sup>60</sup>

Improvements in business activity accompanied operation of the light rail. For example, there has been a 20 percent increase in pedestrian traffic, according to the Metropolitan Transportation Authority. Retail and restaurants sales rose by 25 percent, tourism increased by 15 percent, and hotel occupancy rates grew by 15 percent. Several high-end hotels have opened in historic buildings, while the Four Seasons is partially converting to condos. Houston's downtown property tax yields also increased by 10 percent.<sup>61</sup>

Economic development along the new METRO Rail line is expected to range from \$500 million to \$1 billion, and in the next two decades, weekday boardings may soar to 40,000. It will also link some of the most important venues, including downtown employment centers – Enron Field (Houston Astros baseball), three major universities, the museum district, Hermann Park, the Houston Zoo, the Texas Medical Center, the Astrodome complex, and exhibit halls. Construction near the alignment includes a new basketball arena, expansion of the Convention Center and a convention center- hotel.



Downtown Houston LRT  
(Source: Light Rail Now Website)

Houston's downtown population grew from 1,400 in 1990 to 3,000 in 2003. Currently a 28-32 floor mixed-use tower is being built downtown, and real estate sources expect more downtown housing. From 1997 to 2002, the retail sales and food service per person decreased by 4 percent, while the number of establishments in the CBD increased by almost 10 percent. The City is working with neighborhood coalitions and developers to plan TOD along routes outside the downtown.

## **Jersey City**

New Jersey Transit's Hudson-Bergen light rail line serves Jersey City, Bayonne, and Hoboken. The route is a reversed Y shape, with its stem running southward from Hoboken

<sup>59</sup> 2006 Urbanomics Transit Agency Survey.

<sup>60</sup> Ibid.

<sup>61</sup> Jane's Urban Transport Systems

through the waterfront area of Jersey City and two branches extending to western Jersey City and southwards to Bayonne. It connects with the Port Authority's Trans-Hudson line at Hoboken, Newport, and Exchange Place.

During the 1980s and early 1990s, planners and government officials realized that alternative transportation systems were needed to relieve the increasing congestion along the Hudson River waterfront, particularly in the area of the Hudson River crossings. After numerous studies, it was decided that the most efficient and cost-effective means of meeting the growing demands of the area would be a light rail system, constructed in several phases.

As of February 11, 2006, the Hudson-Bergen Light Rail managed a service pattern using three connected routes. This service was extended to Tonnelle Avenue with the opening of new stations in Union City and North Bergen on February 25, 2006. The three routes are: West Side Avenue (Jersey City) to Tonnelle Avenue (North Bergen), Hoboken Terminal to Tonnelle Avenue (North Bergen), and 22nd Street (Bayonne) to Hoboken Terminal. As of August 2006, the LRT serves an average of 27,000 customers per day, and is expected to serve more than 34,000 customers per day by 2007. Much of the additional ridership is projected to come from real estate developments that are being built around the Hudson-Bergen Light Rail stations on vacant brownfields and underused properties.

The light rail has been a catalyst for both residential and commercial development along the route and has played a significant role in the revitalization of Jersey City. Many of the stops were placed in vacant or underutilized areas, which are now beginning to see intense residential and mixed-use development. The line running along Essex Street in downtown Jersey City has generated 3,000 residential units in five years, as of 2006. An 86-acre tract of land bordering Liberty State Park is being redeveloped into a transit-oriented development known as Liberty Harbor North, which will consist of 6,000 residential units and millions of square feet of commercial space. Other developments are either planned or already underway in West Hoboken, Bayonne, and Weehawken, in areas very near to light rail stations.

There is a relationship between the economic development along the waterfront and the light rail. Jersey City is also known as "Wall Street West."<sup>62</sup> The transportation network is one of the critical elements shaping the re-emergence of Jersey City as a thriving mixed-use community, and the new Hudson-Bergen Light Rail transit system is a key part of this transformation. Developments include Exchange Place, Goldman Saks, Liberty Harbor North, and the JC Medical Center.



System Map (Source: NJ Transit)

<sup>62</sup>Antoinette Martin, "Wall Street West Recuperates From 9/11," N.Y. Times, March 16, 2005.

Jersey City was economically devastated on September 11<sup>th</sup>, 2001, which launched it into a real estate development slump. By the end of 2004 however, the trend had begun to reverse. Last year, about 920,000 square feet were leased, higher than the 380,000 square feet leased in 2003, but still far below the 4 million square feet leased in 2001.<sup>63</sup> From 1997 to 2002, Jersey City's retail service and restaurant sales per person decreased by 0.3 percent, while the number of establishments in the CBD also decreased at a rate of 3 percent.



LRT Vehicle (Source: NYC Subway)

As of 2006, within the 1.5 square mile downtown Jersey City development district, the 22 built or soon to be built parcels adjacent to the light-rail tracks make up the majority of the 11.8 million square feet of commercial space built downtown over the past 7 years and 40 percent of the housing units. And within 2 city blocks of the light rail tracks, all of Jersey City's office and hotel additions and over three-quarters of its housing units have congregated.<sup>64</sup>

When the light rail is complete in 2008, the line will be 20.6 miles long with 48 cars and 100,000 daily riders. With an overall cost of approximately \$2.2 billion, the Hudson-Bergen Light Rail is one of the largest public works projects ever undertaken in New Jersey. A mixture of state and federal funds is funding the project. The Federal Transit Administration is contributing 41 percent of the \$1.2 billion cost.<sup>65</sup>

## **Los Angeles**

The Metropolitan Transportation Authority of Los Angeles runs 55 miles of light rail within a 4-line –system, three lines of which are LRT and one is heavy rail. The Blue segment opened in 1990, the Green Line was added in 1995, the Red Line (heavy rail) was extended in 2001, and Phase 1 of the 13.75-mile/13-station Metro Orange opened in 2003 (Phase 2 is still under construction). The Blue Line runs north and south connecting Long Beach and Los Angeles. The Green Line intersects the Blue Line, running east and west between Norwalk and Redondo Beach and curving south near the Los Angeles International Airport. The Red Line meets the Blue Line in Los Angeles and offers service through downtown, the Mid-Wilshire area, Hollywood, and the San Fernando Valley, where it meets the Metro Orange Line transitway. The Metro Gold Line links with the Red Line at Union Station and runs northeast to Pasadena.<sup>66</sup>



LRT Vehicle at Staple's Center (Source: Friends for Expo Website)

LA's population increased at a rate of 6 percent from 1997 to 2002, while its LRT ridership increased by almost 44 percent. From 2002 to 2005, the ridership again increased at a rate of 16 percent. The retail sales and food service per person increased by 10 percent

<sup>63</sup> Antoinette Martin, "Wall Street West Recuperates From 9/11," N.Y. Times, March 16, 2005.

<sup>64</sup> New York City Subway Resources Website; [www.nycsubway.org](http://www.nycsubway.org).

<sup>65</sup> The Record (Bergen County), February 8, 2006, p. L-3.

<sup>66</sup> Los Angeles County Metropolitan Transportation Authority; [www.mta.net](http://www.mta.net).

for the city as a whole and the number of establishments in the CBD increased by 11.5 percent from 1997 to 2002. Additionally, the Los Angeles light rail has been a catalyst for real estate development along its route.

Even before the opening of the light rail, but after the announcement, Los Angeles saw a great deal of development along the proposed route. A transportation manager from the Metropolitan Transportation Authority noted that assemblages of development sites were taking place at a high rate along the route at this time.<sup>67</sup> In past years, developers tended to hang back to see how much additional traffic the rail lines would generate, but there is now enough of a positive track record in Hollywood and along the Gold Line to Pasadena that activity is blossoming early. Construction on the western end of the line is already getting off to a healthy start. Private developers purchased property along the rail line while it was under construction. Similarly, major residential projects by The Related and Trammell Crow Companies were taking place.<sup>68</sup>

Holly Street Village was built in anticipation of the Blue Line Memorial Park Light Rail Station. The project includes 374 one- and two-bedroom apartments in 7 buildings as well as 200,000 square feet of parking and 11,000 square feet of offices and retail on the ground floor.<sup>69</sup> The blue Line also has sparked \$1 billion in development at Long Beach stations.<sup>70</sup>

Also underway at this time was the \$183 million rebuilding of White Memorial Medical Center on Boyle Street, one block north of the planned rail line. Much of the future development will be controlled by the public entities that own considerable tracts of land along the route of the Eastside Extension, including the city and county of Los Angeles and the Metropolitan Transportation Authority, which is building the rail line. The MTA owns land around five of the eight proposed rail stations, ranging from 1 to 6.5 acres.<sup>71</sup>

The manager also stated that new establishments such as retail, residential, hotels, and entertainment facilities were being built following the announcement at a high rate. She noted that there was a significant increase in property values and a slight percent move-out of retail stores/restaurants, hotels, and no decline in business sales or rents.<sup>72</sup>

During the construction phase, the LRT did trigger many developments. It mirrored the development that happened even before the opening of the light rail, but after the announcement. As in Dallas, one can assume the light rail was a catalyst for the new development, but the economy, which was and currently is on an up swing, no doubt contributed.

After the light rail was in operation, there were many improvements in the business activity. These included a 50 percent increase in pedestrian traffic, a 30 percent rise in retail and restaurants sales and a 10 percent increase in tourism. Los Angeles' downtown property tax yields increased by 100 percent. There was also an increase in retail and restaurant rents, hotel occupancy, hotel room rates, and attendance at theaters and other venues, but at an unquantified rate.<sup>73</sup>

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<sup>67</sup> 2006 Urbanomics Transit Agency Survey.

<sup>68</sup> Public Housing Work.

<sup>69</sup> State of California; [www.ca.gov](http://www.ca.gov).

<sup>70</sup> South San Francisco General Plan; [www.ci.ssf.ca.us](http://www.ci.ssf.ca.us).

<sup>71</sup> Public Housing Work.

<sup>72</sup> 2006 Urbanomics Transit Agency Survey.

<sup>73</sup> Ibid.

The Metropolitan Transit Authority has formed public/private TOD partnerships, which are constructing mixed-use developments at 5 new stations: Transit Mall, Long Beach; Willow St, Long Beach; Holly Street, Pasadena; Hollywood/Highland, Los Angeles; and Wrigley Marketplace, Long Beach. For example in 1998, TrizecHahn Construction Company with the help of local authorities built a mixed-use center at the LRT site of Hollywood and Highland. This entertainment and retail complex will include a 470-room hotel, theaters, shops, and a 3,300 seat live-broadcast theater that will serve as the home of the Academy Awards.<sup>74</sup>



Long Beach Blue LRT Line (Source: Sierra Club)

Another public/private partnership was the Grand Avenue development off the Blue Line. The project, estimated to cost \$1.8 billion, includes up to 3.6 million square feet of development, such as entertainment venues, restaurants, and retail, mixed with a 400-room hotel and up to 2,000 new housing units. The project is expected to generate 25,000 construction jobs, 5,300 long-term jobs and over \$28 million annually in local, county and state taxes.<sup>75</sup>

On a negative note, TOD projects did not net initial expectations in the early 1990s, mostly due to the severe economic depression that hit southern California. When the California economy started to regain strength in the 1996-97, projects once again became financially feasible. Also blighted areas with LRT stops might have a difficult time attracting development, as might areas with a high amount of existing retail.

The largest publicly owned undeveloped site along the Eastside Extension is in Little Tokyo, at the northeast corner of Alameda and First streets. Once called the Mangrove Estates, this 10-acre, city-owned parcel has seen several development proposals come and go, including one in the late 1980s for a 600-room hotel and 1,200 condo units. The plan was derailed when former councilman Art Snyder, then working as a lobbyist, pleaded guilty to laundering political contributions on behalf of the site's developer.<sup>76</sup>

## **Memphis**

The Memphis Area Transit Authority's (MATA) light rail currently consists of a 7.5-mile historic tramway. The initial LRT was a 2.5-mile system on Main Street, linking the South Main and Pinch historic districts with numerous downtown attractions. It was expanded

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<sup>74</sup> South San Francisco General; [www.ci.ssf.ca.us](http://www.ci.ssf.ca.us).

<sup>75</sup> Grand Ave Development; [www.grandavecommittee.org](http://www.grandavecommittee.org).

<sup>76</sup> Public Housing Work.

in 1997 with a 2-mile Riverfront Trolley Loop connecting the two ends of the Main Street Line, and primarily using a railroad right-of-way shared with Amtrak. Because of the success of the historic trolley service, in 2004 MATA planned a citywide LRT system including the 2.5-mile Medical Center expansion, which connects the historic system, using much of its trackage, and two major employment areas with downtown Memphis. The region's master plan aims to provide LRT service to all of Memphis-Shelby County.<sup>77</sup>

The Medical Center Rail Extension provides a transportation and economic development link between the Central Business District and the Medical Center and will increase transit service choices for employees, residents and visitors. This area has a high density of development, with a sizeable concentration of households without automobiles, many elderly people, and others who depend on transit for access to the medical facilities for treatment and employment. The rail line will boost development efforts that are already underway and provide a catalyst for redevelopment in other areas along the corridor. The new expansion project is about two miles in length and will connect the two largest employment centers in the region via six stations.



Medical Center LRT  
(Source: Light Rail Now Website)

In coordination with the Main Street Trolley and Riverfront Loop, the Medical Center Rail Extension completed the downtown rail circulation system. The Medical Center Rail Extension is also envisioned as part of a regional light rail system, which is planned for completion in 2020. The project is intended to accommodate future changes from vintage trolley vehicles to modern vehicles, when a regional line is completed. Five additional vintage trolley vehicles have been acquired and will be restored for initial operation on the Medical Center Rail Extension. The total cost of the project is \$74.6 million with 80 percent of the funding provided by the Federal Transit Administration (FTA) and the remaining 20 percent split between the City of Memphis (10 percent) and the Tennessee Department of Transportation (10 percent).<sup>78</sup>

The Memphis population as a whole has increased by 10 percent from 1997 to 2002. In addition, the LRT ridership increased by 79 percent from 1995 to 2006. The city as a whole saw a decrease in retail and restaurant sales by 3 percent, while the number of establishments in the CBD increased by 12 percent from 1997 to 2002. However, retail sales and food service per person have decreased by almost 4 percent.

The light rail is currently undergoing a 9-mile expansion project in its downtown and airport corridors. This expansion is part of the regional transit plan. The \$400 million expansion project will include 10 new LRT stops. This new route could combine three entertainment and shopping districts -- Downtown, Overton Square and the Cooper-Young neighborhood -- with three employment districts -- Downtown, the medical district and the airport. Also officials say that the other route could help rejuvenate part of the economically depressed Lamar corridor.<sup>79</sup>

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<sup>77</sup> Light Rail Now; [www.lightrailnow.org](http://www.lightrailnow.org).

<sup>78</sup> MATA Website; [www.matatransit.com](http://www.matatransit.com).

<sup>79</sup> Amos Maki, "Light rail in limbo? Annual operating costs among concerns of City Council members," Memphis Business Journal, July 15, 2005.

During the construction phase, the LRT did not trigger much development. It did cause a moderate increase in new retail and property values in the downtown area. However, it was also accompanied by a decline in business sales and rents.<sup>80</sup>

After the light rail service became operational, Memphis saw an improvement in the downtown area. Pedestrian traffic, retail/restaurants sales, tourism activity, and property tax all rose by 40 percent.<sup>81</sup> One can assume the light rail was a catalyst for the new development, but the economy, which was and currently is on an up swing, is likely to have contributed. However, there has been definite real estate development along its alignment. A planner from the Memphis Area Transit Authority noted that, even before the opening of the light rail, but after the announcement, Memphis saw a moderate increase in property development in the downtown area.<sup>82</sup>

The planner from the Memphis Area Transit Authority made a note of two recent downtown developments since the LRT has been in operation: 310 South Main and the Cotton Museum at the Memphis Cotton Exchange.<sup>83</sup> "South Main" has transformed a vacant building into six condominium units' just blocks away from the Downtown entertainment district. The developers, Porter and Kerr, are spending about \$1 million to completely renovate the building. Units will begin at \$250,000, with pre-sales starting in April 2006.<sup>84</sup> The Cotton Museum opened in the fall of 2005. It is located on one, 5,000-square foot floor of the historic Exchange building in downtown Memphis.<sup>85</sup> The overall project is expected to cost \$1.5 million.

## **Newark**

The Newark Light Rail, operated by New Jersey Transit, is made up of two segments: the Newark City Subway and the Newark Light Rail. The service was officially inaugurated on July 17, 2006. The segments are run separately, with a single transfer point at Newark's Penn Station. The Newark City Subway is the longer of the two segments and, in spite of its name, is a "subway-surface" light rail line, which runs underground in downtown Newark and above-ground in outlying areas. Newark's system accommodates 6,500 riders per day between the two regional rail stations.



Newark LRT (Source: Bob Vogel)

New Jersey's Newark subway (LRT) is a small part of a once extensive, urban/suburban electric railway system that covered Newark and connected it with surrounding communities throughout northern New Jersey. The City's subway, constructed on the foundations of the old Morris Canal, opened in 1934, adding an extension to Penn Station in 1937, and a northern surface extension to Franklin Ave in 1940, resulting in the total length of 4.3 miles with 11 stations. In June 2002, the route was extended from Branch Brook Park to Grove Street, resulting in an newly extended subway route of about 5.1

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<sup>80</sup> Ibid.

<sup>81</sup> Ibid.

<sup>82</sup> 2006 Urbanomics Transit Agency Survey.

<sup>83</sup> Ibid.

<sup>84</sup> Carolyne Park, "Developers love South Main-Condo project, filmmaker, retailer join revitalized area," Memphis Business Journal, March 24, 2006.

<sup>85</sup> "Memphis Cotton Exchange plans museum." Delta Farm Press Release, October 13, 2000.

miles, with a total of 13 stations. This marked the first real expansion of rail transit in Newark since the massive cutbacks that lasted into the 1950s.<sup>86</sup>

The Newark Light Rail is 4.3 miles long and runs between Newark Penn Station and Grove Street in Bloomfield. Initially called the Broad Street Extension, the second segment of the Newark Light Rail is one mile long and connects Newark Penn Station to Broad Street Station. A section of the extension, from Newark Penn Station to Center Street, runs underground using the refurbished Cedar Street Subway tunnel. The remaining section runs aboveground. One stop serves the New Jersey Performing Arts Center, while another serves the Bears and Eagles Riverfront Stadium. The extension opened on July 17, 2006.<sup>87</sup>

State and city officials hope that the LRT will help spur redevelopment in the area. The rail service cost \$207.7 million,<sup>88</sup> adds five stations, including one at the New Jersey Performing Arts Center, and will provide easier transit access from Newark's north side and suburbs to the office complexes and academic institutions around Penn Station.<sup>89</sup>

From 1997 to 2002, Newark's population increased by 3.6 percent, while its ridership grew by almost 9 percent. Due to this growth, Newark is in the process of extending its existing system to meet the demand of Newark and the surround area. A possible extension could be to either Cranford or Plainfield. Another segment of the expansion could run between the North-East Corridor and the Jersey Gardens mall.

Newark's light rail has spurred investment in the downtown area. In 2004, New York City's Village Voice stated that Newark is in the midst of a comeback. Two developments, the New Jersey Performing Arts Center, completed in 1997, and the Bears & Eagles Riverfront Stadium, opened in 1999, are "injecting life into this once beleaguered" city. The proposed arena is bringing the New Jersey Devils to town.<sup>90</sup> From 1997 to 2002, Newark as a whole saw a decrease in retail services and restaurant sales of 0.7 percent per person, while the number of establishments in the CBD increased by 5.4 percent.<sup>91</sup>

Also in 2004, an investment group led by Marc E. Berson closed on a major office building in the north end of Newark's business district, paying \$26.5 million for the 17-story 400,000 square-foot structure. Although at the time, Newark's vacancy rate was at 15 percent, Mr. Berson thought Newark was on the verge of a major revival. Now that revival is coming to pass as several development and infrastructure projects are underway or in advanced planning, capitalizing on Newark's excellent transportation links to bring a new generation of people to live and work in the city. The Fidelco Group recently acquired a building called One Washington Park, after the triangular park that is diagonally across Washington Street, with plans to refurbish and a reorient the structure to emphasize its proximity to the Broad Street railway station, which sits on one of the two main railroad lines going through the city.<sup>92</sup>

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<sup>86</sup> Light Rail Now Website; [www.lightrailnow.org](http://www.lightrailnow.org).

<sup>87</sup> "Newark Light Rail opens to support City's economic revitalization, Connects Newark's two train stations through business district," New Jersey Times, July 17, 2006.

<sup>88</sup> "Newark rail opens," Associated Press, July 18, 2006.

<sup>89</sup> US Department of Transportation; [www.dot.gov](http://www.dot.gov).

<sup>90</sup> Mark Jacobi, "Close-Up on Newark," March 12th, 2004.

<sup>91</sup> 2006 Urbanomics Transit Agency Survey.

<sup>92</sup> John Holusha, "The Revival Talk Just Won't Die," N.Y. Times, October 24, 2004.



residential high-rise has been proposed. The availability of transit services increases the attractiveness of these projects.<sup>95</sup>

Although most of the city has already been developed, transit is often one of the factors that revitalize a neighborhood. For example, West Philadelphia is currently going through a transformation not only economically but also socially. In September 2005, the reconstructed Route 15-Girard Ave streetcar line of SEPTA began operations. Girard Avenue is a major cross-town artery located about a mile north of Center City, which passes through several neighborhoods (including West Philadelphia) that have seen various levels of reinvestment and are becoming well-known destinations for ethnic eateries and nightlife. The 8.3-mile line, with 18 totally restored 1940s era streetcars, was rehabilitated at a cost of \$88 million (about \$11 million/mile). The opening of the Girard line brings SEPTA's total rail system to approximately 378 miles, including an impressive network of urban and suburban LRT, rail rapid transit and regional passenger rail services.<sup>96</sup>

Christopher Zearfoss, director of the Mayor's Office of Transportation, stated that riders prefer light rail to other forms of public transport. On Girard Avenue, where trolley service was suspended in 1992 until 2004, ridership dropped by 38 percent in the years when buses replaced trolleys. During that period, the area's population declined by less than 10 percent. Zearfoss notes that the decline in ridership took place despite the fact that the trolleys used until 1992 were "superannuated," lacking basic amenities like air conditioning, while the buses that replaced them were state of the art.<sup>97</sup>



Girard Ave LRT (Source: Railway Preservation Website)

Although downtown redevelopment focuses around transit stations, there has not been activity in other areas. Retail sales per person in the city has only increased by 0.3 percent from 1997 to 2002, while the number of establishments in the CBD grew by 5.1 percent for those same years. Encouraged by SEPTA's plan to reinstate Route 15 Light Rail services along Girard Avenue, community-based organizations, developers, institutions, elected officials, and small business owners located along and adjacent to Girard Avenue, created the Girard Avenue Coalition. The Coalition has garnered public support and begun to identify resources for infrastructure improvements to foster economic growth and enhance the commercial environment and quality of life in the surrounding residential neighborhoods.<sup>98</sup>

<sup>95</sup> Gary J. Jastrzab, Director, Strategic Planning and Policy Division, Philadelphia City Planning Commission, August 2006.

<sup>96</sup> Light Rail Now Website; [www.lightrailnow.org](http://www.lightrailnow.org).

<sup>97</sup> Daniel Brook, "Will Light Rail Prevail? Mass transit advocates hope the seasonal trolley runs prove that the public wants to ride."

<sup>98</sup> The Philadelphia Empowerment Zone. [www.empowermentzone.org](http://www.empowermentzone.org).

"The coalition would not have happened without the LRT. The lower-income neighborhood realized this would be an exceptional chance to stabilize and improve these areas that have declined over a long period of time," according to Paul Marcus from the Local Initiatives Support Corporation.<sup>99</sup> When the route came to the community, residents realized that if there was money for transportation it could be paralleled with other community investments. Because of the buzz created by the LRT route, the neighborhood is seeing more and more basic amenities return as well as new residential development; for example, 540 town homes are being built in the Girard Avenue area. Route 15 also serves three hospitals, several historical churches, and Girard College.<sup>100</sup>

SEPTA states that they want economic development along all routes. They believe that with every capital dollar invested in transit, there is a \$6 return in economic growth.<sup>101</sup>

## **Pittsburgh**

The Port Authority of Pittsburgh began operating a 25-mile light rail in 1984, which is called the "T." It provides service to Downtown Pittsburgh and several communities south of the city via four light rail transit lines to the South Hills: Allentown, South Hills Village, Overbrook and Library. In 2004, the Port Authority opened the rebuilt Overbrook Line, which provides a more efficient rail service from Castle Shannon to Downtown Pittsburgh. The 5.2-mile Overbrook Line was closed in 1993 due to track bed deterioration. Since then, it has been upgraded to a modern light rail with 9 new stations, as part of the Stage II Light Rail Project.<sup>102</sup> The subway provides rail service to major destinations and business hubs within Downtown.

The Port Authority received a \$46.7 million grant from the U.S. Department of Transportation for the Stage II Light Rail Project, which is a \$386 million initiative to re-establish light rail service from downtown Pittsburgh to its South Hill suburbs. The Port Authority used the grant to reimburse the construction expenses accumulated during the rebuilding of the Overbrook and Library lines, and to buy new light rail vehicles and communications equipment.<sup>103</sup> The Stage II project is expected to attract approximately 13,000 weekday riders to the "T" by 2015. The project has supported more than 17,000 jobs and is anticipated to bring the region some \$2.2 billion in economic benefits through consumer spending, investments, and the generation of business revenues, among other economic stimuli.<sup>104</sup> The light rail system provides a more able and faster service downtown and around the city.

Although the LRT ridership has decreased by 35 percent from 1997 to 2005, it peaked in 2006 with an average increase of over 7,000 more transit users every weekday.<sup>105</sup> In light of this recent increase and a large amount of public support for the T, the Port Authority has been working on plans to extend the light rail system across the Allegheny River (Gateway extension) and to the new convention center (Convention Center extension) as part of the North Shore Connector Project. The total cost of this project is expected to

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<sup>99</sup> Janet Greenstein Potter, "Route 15 Returns," The Philadelphia Empowerment Zone; [www.empowermentzone.org](http://www.empowermentzone.org).

<sup>100</sup> Ibid.

<sup>101</sup> Ibid.

<sup>102</sup> Pittsburgh Port Authority Website; [www.portauthority.org](http://www.portauthority.org).

<sup>103</sup> Contact: Melissa Sabatine, "U.S. Department of Transportation Invests in Pittsburgh Light Rail System," US DOT Circular FTA 53-04, October 8, 2004.

<sup>104</sup> PRNewswire, June 1, 2004; Port Authority News Release, May 29, 2004.

<sup>105</sup> Light Rail Now Website; [www.lightrailnow.org](http://www.lightrailnow.org).

be \$393 million.<sup>106</sup> The North Shore extensions are expected to be in service by 2007. The Gateway extension will be 1.52 miles long and include two new stations. The Convention Center extension will add 0.3 of a mile of rail with a single new station. These extensions will allow further growth of the light rail system west, north and east of Downtown Pittsburgh.

While Pittsburgh's population has decreased by 5 percent from 1997 to 2002, its retail sales and food service per person increased by almost 25 percent. Meanwhile, the number of establishments in the CBD decreased by 5 percent. Additionally, the Pittsburgh light rail has been a catalyst for real estate development along its route. A planner from the Port Authority noted that development sites adjacent to the route were being assembled at a very high rate after the extension was announced. He also stated that new establishments such as retail, residential, hotels, and entertainment facilities were being built at a high rate and that there was also a high increase of property values in the Downtown.<sup>107</sup>

During construction, the LRT did not spur as much development as prior to construction. Despite the high number of assemblages, only new retail was being developed during this phase. Construction of the extension did cause a moderate increase in the rate of move-out of retail stores, restaurants, and hotels and a decline in business sales or rents. There was also a decline in tourism activity and a decrease in commercial rents. The downtown experienced some negative effects during this phase because construction was located in the CBD with major subway sections built at steel plaza, and along 6th and Liberty Avenues.<sup>108</sup>



Pittsburgh LRT Vehicle (Source: Light Rail Now & TB Car Build Websites)



Since the opening of the LRT, the downtown area has seen an increase in pedestrian traffic. Retail and restaurants sales and rents have also increased, as have entertainment activities and property taxes, though the percentages cannot be quantified.<sup>109</sup> In May 2006, the Encore on 7<sup>th</sup> Avenue, a luxury 300,000 square foot apartment building, opened near the LRT Grant station. Located in the heart of the renowned Cultural District, the Encore on 7th is just steps away from Broadway-style theater, the Pittsburgh Symphony,

<sup>106</sup> Light Rail Now Website; [www.lightrailnow.org](http://www.lightrailnow.org).

<sup>107</sup> 2006 Urbanomics Transit Agency Survey.

<sup>108</sup> Ibid.

<sup>109</sup> Ibid.

fine dining and shopping with views directly up and down the Allegheny River and the North Shore with PNC Park and Heinz Field.<sup>110</sup>

One Mellon Center is located at the Steel Plaza "T" Station, a key link in the Port Authority of Allegheny County's light rail transit system. This 54-story Class A office tower lies at the intersection of Fifth Avenue and Grant Street and is the corporate headquarters of Mellon Financial Corporation as well as the home of other companies. The Mellon Financial Corporation was attracted to this location because, in Pittsburgh, 50 percent of workers use mass transit to get to work and it is also central to courts, government offices, retail shopping and to other major office towers. The Plaza Levels include amenities such as the Carlton Restaurant, a Citizens Bank Retail Branch, Bailey Banks and Biddle, an eatery, a dental office, a hair salon, and a newsstand.<sup>111</sup> The LRT also connects with Station Square, a mixed-use shopping area including hotels, entertainment venues, several sport stadiums and the Science Center.

Pittsburgh light rail transit has experienced a roller coaster ride of setbacks and advances over the past several decades. After its heyday in the 1960's, a plan to get rid of all LRT was proposed in the 1970's, which met with community opposition. Pittsburgh citizens responded in favor of retaining the electric rail trolley system and upgrading it to modern LRT. In the end, the LRT option was adopted, along with a busFway system. Today, the future of LRT in Pittsburgh looks increasingly optimistic.

## **Portland**

The Tri-County Metropolitan Transportation District of Oregon (TriMet) MAX Light Rail system connects Portland, Gresham, Beaverton, Hillsboro and the Portland Airport. The system is comprised of 3 lines: a 38.5-mile, 64 station line first opened in 1986 (Eastside MAX), to which a 17.75-mile extension was added in 1998 (Westside MAX); a 5.6-mile branch (Airport MAX) opened in 2001; and a 5.8-mile branch (Interstate MAX) opened in 2004. A 2.4-mile circulator street tramway opened in 2001.

The MAX Blue Line (Eastside and Westside MAX) runs from Hillsboro through Beaverton and Portland City Center to Gresham. The MAX Yellow Line (Interstate MAX) serves North and Northeast Portland via Interstate Avenue, running between the Portland City Center and the Expo Center. The MAX Red Line (Airport MAX) travels from Beaverton through the Portland City Center to the Portland International Airport.<sup>112</sup> As of 2006, a Yellow line extension to Washington State and an east/south extension of the tramway to Lloyd District are under consideration, while, in preparation for extending the tramway, 0.63 miles of track are under construction along the river. The Tramway extension will be part of the new business district development south of the CBD, known as the South Waterfront Central District.



LRT in Retail Area (Source: Project for Public Spaces)

<sup>110</sup> The Encore on 7th Website; [www.threncoreon7th.com](http://www.threncoreon7th.com).

<sup>111</sup> The Mellon Center, Grant Street Associates, Inc.; [www.gas-cw.com](http://www.gas-cw.com).

<sup>112</sup> Portland TriMet Website; [www.trimet.org](http://www.trimet.org).

Like many other cities, Portland is growing in population and is proactively looking for ways to encourage economic development. From 1997 to 2002, the city's population increased by almost 7 percent. From 1997 to 2002, LRT ridership increased by an extraordinary 170 percent, due to the construction of new extensions and new lines, the increase in population, and an upswing in the economy. The city's retail service and restaurant sales per person increased by almost 25 percent, while the number of establishments in the CBD only increased by 5.4 percent over this period. Keeping Portland's Downtown healthy is critical to the region's economic strength and the LRT expansion was a perfect tactic for stimulating the city's economic and social growth. Additionally, the Portland LRT has helped reduce per-capita greenhouse emissions, having pushed carbon dioxide emissions to a level below 1990 for a decrease of 13 percent over past 10 years.<sup>113</sup>

As of August 2006, the southern Green line extension from Portland to Clackamas Center along I-205, which is scheduled to open in 2009, is in the planning stages. In 2005, Portland's TriMet transit agency approved the purchase of 33 parcels for the 6.5-mile extension along I-205 from the Gateway Transit Center to the Clackamas Town Center. The right of way is in position and final engineering is already underway. \$557 million has been allocated for this project, which also includes funding to install LRT trackage on Portland's Downtown Transit Mall, which occupies 5th and 6th Avenues.<sup>114</sup>



TriMax Downtown  
(Source: Portland Oregon Visitors Association)

Transit-oriented development implementation has increased since the opening of the region's second light-rail line (Westside) in 1998. By TriMet's estimate, more than \$3 billion in new development has transpired within walking distance of the stations along the 38-mile system. At the Civic Stadium LRT stop, developments include "Stadium Station," a mixed-use building consisting of 115 apartments and 3,000 square feet of retail, while located at the Jefferson LRT Station are "Arbor Vista," which consists of 27 condos, and "Collins Circle Apartments," comprising 124 apartments and 5,000 square feet of retail.<sup>115</sup>

In the late 1990's, the Bechtel Corporation obtained exclusive rights from TriMet, the Port of Portland and the Portland Development Corporation (PDC) to develop the 120 acres near Portland International Airport into a hotel, retail, and office project called Cascade Station. In exchange, Bechtel agreed to fund \$30 million of the 5 mile LRT extension along I-205 to the airport. The opening date for Cascade Station was September 11, 2001.<sup>116</sup>

<sup>113</sup> Jane's Urban Transport, October 2004.

<sup>114</sup> Ibid.

<sup>115</sup> Case Studies of Transit Oriented Development.

<sup>116</sup> Steve McLinden, "Architects Ride the Rail," The National Real Estate Investor, July 1, 2004.

Across town, in 1998, a 4.8-acre Urban Brownfields project was initiated at Northeast 60<sup>th</sup> Avenue and Gilsan Street called Center Commons. This rail-adjacent project features a 314-unit affordable senior housing development, 28 row houses, and some light retail. The owner, Lennar Affordable housing, planned to use tax credits, private money, and state bonds for the project. After 4 years, this development is almost full, while the airport development remains mostly vacant. The timing of the airport development was unfortunate, but the economy is on the upswing and, as of 2004, there was a lot of interest.<sup>117</sup>

TriMet has been encouraging government office buildings and regional attractions to locate near MAX stations. For example, the Rose Garden basketball arena and the Oregon Convention Center were both built at existing light rail stations and incorporated with the transit system. They are also working with redevelopment agencies to promote private development in station areas. For example, the PDC took a vigorous role in involving a private developer in the Pacific stadium complex. The PDC also used urban renewal funds to add transit and pedestrian- friendly amenities in some station areas.<sup>118</sup>

### **Salt Lake City**

The Utah Transit Authority (UTA) light rail system known as TRAX, consisting of 20 miles of track, 2 lines, and 23 stations, initially opened in 1999 between the Delta Center and Sandy. In 2001, a 3.3-mile extension to Eccles Stadium opened followed by a 1.5-mile extension to the Medical Center in 2003, completing access from the central business district on the University Line.

In 2001, UTA developed a plan to work with businesses impacted by TRAX construction. "Businesses had money to reward the contractor for keeping traffic moving through the area," recounted local TV news reporters.<sup>119</sup> After construction, businesses have also been rewarded since thousands of prospective customers poured off the TRAX trains, as soon as the University branch opened.

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<sup>117</sup> Ibid.

<sup>118</sup> Case Studies of Transit Oriented Development.

<sup>119</sup> KSL-TV, December 2001; [www.ksl.com](http://www.ksl.com).



Downtown LRT Map (Source: Institute of Navigation)

The TRAX LRT system goes through the University of Utah campus. TRAX also serves the Downtown and Meadowbrook Campuses of Salt Lake Community College. Moreover in 2006, the Latter-Day Saints (LDS) Business College and the Brigham Young University (BYU) Salt Lake Branch are going to be relocated alongside the TRAX line in downtown Salt Lake City.<sup>120</sup> Like the original starter line, TRAX's University branch was flooded with passengers. UTA estimated ridership on the new extension at 5,000 per day – about 900 rider-trips, or 22 percent, over original forecasts.<sup>121</sup>

While Salt Lake City's population increased by 6 percent from 1997 to 2002, its retail sales and food service per person decreased by almost 14 percent even though the number of establishments in the CBD increased by almost 1 percent. Additionally, from 1997 to 2005, the LRT ridership increased by 59 percent. Due to the increase in population and ridership, the UTA is currently planning additional extensions: to the Airport (6.6 miles), Mid-Jordan (10.44 miles), West Valley city (4.88 miles), and Draper (8.5 miles), Their timing depends upon federal and local funding.

Even before the opening of the light rail, but after the announcement, Salt Lake City saw a great deal of development in the downtown area.<sup>122</sup> From 1990 to the 2002 Winter Games, Salt Lake City experienced a downtown boom. During this period, \$1.4 billion were invested in major public projects (Matheson Court Complex, Salt Lake Library) and private projects (The Gateway). While some of these were a result of the 2002 Olympics, the LRT may have been a factor in their development. A deputy chief of the Utah Transit Authority stated that new establishments such as retail, residential, and hotels, were being built during this time, and that there was a moderate increase of property values in the Downtown.<sup>123</sup>

<sup>120</sup> Light Rail Now Website; [www.lightrailnow.org](http://www.lightrailnow.org).

<sup>121</sup> Salt Lake Tribune, April 2002; [www.sltrib.com](http://www.sltrib.com).

<sup>122</sup> 2006 Urbanomics Transit Agency Survey.

<sup>123</sup> 2006 Urbanomics Transit Agency Survey.

During the construction phase, the LRT did not cause more changes as in the pre-construction phase. Even though there was a moderate rate of assemblages of development sites, only new retail was developed. Construction did result in a slight increase in property values and a moderate amount in move-out of retail stores and restaurants. Since the opening of the LRT, the downtown area has seen a 20 percent increase in pedestrian traffic and an unquantified increase in tourism activity. In addition, according to the UTA's survey, the amount of Salt Lake City residents who say they use the transit system increased from 20 percent before the introduction of the LRT, to 60 percent in 2004.<sup>124</sup>

The Sandy LRT Line serves NBA's Utah Jazz at Delta Center in downtown Salt Lake City and Franklin-Covey Field; the 2002 Olympic Games were supported by the extension to Eccles Stadium. During the 2002 Winter Olympic Games, UTA's transit system was declared a terrific success, safely and efficiently accommodating more than four million rider-trips by Olympic visitors.<sup>125</sup>

Retail development has also taken place along the LRT in the downtown area. For example, "Gateway Plaza" is a shopping/office district built on the west end of Salt Lake. Like much of the construction in Utah, it was fast-tracked so that the stores would be open for the Olympics. By now, Salt Lake City has three downtown malls. A representative of the Utah Foundation research organization stated that it has been a major success in large part due to light rail, which has greatly expedited development. "Library Square," which includes a new flagship library, was completed in 2003 and has since been named the 2006 Library of the Year by the American Library Association. It consists of a festival venue, retail, office space, and an upcoming Science Museum. A major retail/office development is in the planning stages in the heart of downtown, also on the light rail line. This development will replace two rundown malls.<sup>126</sup>

In 2005, investments in the CBD were estimated to exceed \$1.6 billion by 2010. There's no precedent in the CBD's history of equivalent investment activity in such a concentrated time frame. In this period, the driving force will be an over \$1 billion investment by The Church of Jesus Christ of Latter-Day Saints in commercial ventures, including office space, retail malls and housing.<sup>127</sup> Additionally, due to the nearly full occupancy of office space along light rail, several large office buildings are either in the planning stages or are about to be built, whereas, prior to light rail, vacancy had been rapidly increasing.<sup>128</sup>



LRT and Church of Later Day Saints  
(Source: Friends 4 Expo)

<sup>124</sup> Light Rail Now Website; [www.lightrailnow.org](http://www.lightrailnow.org).

<sup>125</sup> Salt Lake Tribune, April 2002.

<sup>126</sup> Utah Foundation Website; [www.utahfoundation.org](http://www.utahfoundation.org).

<sup>127</sup> Light Rail Now Website; [www.lightrailnow.org](http://www.lightrailnow.org).

<sup>128</sup> Utah Foundation Website; [www.utahfoundation.org](http://www.utahfoundation.org).

Light rail has also eased the demand for parking downtown and the University of Utah, which are minutes away. This has significantly increased attendance at downtown concerts and cultural events. Currently 25 percent of all University of Utah students, faculty, and staff take light rail, eliminating the need for a parking structure that was about to be built.<sup>129</sup>

According to the UTA mission statement, "The Utah Transit Authority strengthens and connects communities, enabling individuals to pursue a fuller life with greater ease and convenience by leading through partnering, planning, and wise investment of physical, economic, and human resources." Salt Lake City's LRT continues to have a future in the development of the city and surrounding areas.

## San Diego

The Metropolitan Transit System (MTS) of San Diego consists of a 58 mile, 3 line trolley LRT and a "special event" Red Line which runs on game days and other events. The San Diego Trolley was the first Light Rail system in California and has also been the most successful. In 1981, the original 15.9-mile Blue Line from Downtown San Diego to the border at Tijuana only cost \$86 million to construct and within a few years achieved near self sufficiency with fares covering over 90 percent of operating costs (the national average is only 30-40 percent).<sup>130</sup> In 1986, the San Diego Trolley began service on the 4.5-mile segment of the Orange Line to Euclid Avenue and to the new Bayfront/E Street Station in Chula Vista. In 1989, the Orange Line segment to Spring Street in the City of La Mesa and between Spring Street and El Cajon opened. In 2005, the annual ridership was 33 million.<sup>131</sup>



System Map (Source: Urban Rail Website)

<sup>129</sup> Ibid.

<sup>130</sup> 2006 Urbanomics Transit Agency Survey.

<sup>131</sup> Ibid.

In 1990, service on the new Orange Line extension to Bayside Corridor served the new Convention Center and hotels. In 1992, the Blue Line extension to County Center/Little Italy Station opened, while in 1995, the Orange Line segment opened between El Cajon Transit Center and Santee Town Center. In 1996, the Trolley began service on the extension from County Center/Little Italy Station to Old Town Transit Center and in 1997, the Blue Line extension from Old Town to Mission San Diego Station opened. In 2005, the 5.6-mile, Green Line Trolley Extension Project was completed, closing the gap between the Blue and Orange Lines. Its showcase station will be the underground Trolley Station at San Diego State University.<sup>132</sup> As of 2006, an 8-mile line from Old Town northwards is in the design stage.

Most of the LRT south of Downtown was originally a railroad branch line. This allowed the Trolley MTS to buy the land very inexpensively. The old branch line was upgraded, double tracked, and electrified, and stations were added. Freight service was also continued, though running mainly at night after Trolley service ends. The freight operation is run by the San Diego and Imperial Valley (SDIV) Railroad.<sup>133</sup>

From 1997 to 2002, the city's population increased by 4.6 percent while the LRT ridership increased by almost 40 percent. The growth in ridership could be due to the extensions constructed during this time period. Retail sales and food service per person also increased by 18 percent, while in the CBD, the number of establishments increased by 7 percent.

Projects have been built at many LRT stations, including "American Plaza." This TOD project features a light rail stop built directly into the tallest building in San Diego; at 34-stories and 555,000 square feet, it houses office space, a retail mall, a food court (17,000 square feet), and the San Diego Museum of Contemporary Art (10,000 square feet). The Starboard Development Corporation financed the office building and nearly four-fifths of the \$5.2 million capital cost for the station, while the Metropolitan Transportation Development Board contributed \$1.2 million. Project planning began in 1987 and the structure was completed in 1991, just in time to accommodate the light rail construction schedule.<sup>134</sup>

Since the opening of the LRT the downtown area has seen an increase in pedestrian traffic as well as in retail and restaurant sales and rents. San Diego Metropolitan Transit System also stated that there has been an increase in tourism activity since the LRT opened; hotel occupancy and room rates rose. Additionally there has been an increase in property tax yields.<sup>135</sup>



Smart Corner  
(Source: Smart Corner Website)

<sup>132</sup> 2006 Urbanomics Transit Agency Survey.

<sup>133</sup> New York Subway resources Website; [www.nyctsubway.org](http://www.nyctsubway.org).

<sup>133</sup> Ibid.

<sup>134</sup> 2000 State of California; [www.ca.gov](http://www.ca.gov).

<sup>135</sup> 2006 Urbanomics Transit Agency Survey.

Construction spurred strong downtown retail development like “Seaport Village,” which consists of 54 retail shops, 17 eateries, and entertainment attractions. The LRT Line also serves entertainment venues including Qualcomm Stadium, Jack Murphy Field, and PETCO Park (home of the Padres), and a convention center.<sup>136</sup>

Residential development has also occurred along the light rail in the downtown area, most notably “Smart Corner,” a transit-friendly infill development. As of August 2006, Lankford and Associates has begun construction of a mixed-use development bordered by Park Boulevard, Eleventh Avenue, C Street and Broadway. The San Diego Trolley’s College Station will separate the two structures: a 301-unit, 19-story residential tower and a five-story, 93,000 square foot office building housing 25,000 square feet of ground-floor retail, all over below-grade parking. Completion is targeted for April 2007.<sup>137</sup>

The latest San Diego Trolley extension symbolizes a further effort to provide major, lifestyle-changing mobility options for San Diegans and a further move toward using high-quality public transport to reform patterns of mobility and urban development for the region. Slowly San Diego is moving in the direction of a fully livable city where extensive, easily accessible mobility by public transport will be a real likelihood.

### **San Francisco**

San Francisco Municipal Railway’s (MUNI) light rail consists of a 32-mile, 7 line system, including 6 conventional tramways upgraded to LRT and an F Line historic streetcar extended to Fisherman’s Wharf in 2000. The LRT was further extended to Caltrain Depot in 2004, and Phase I of Third Street line project in Bayshore corridor opened in 2005. A 6.2-mile elevated guideway people mover at the Airport opened in 2003, and the 1.6-mile Phase II of the Third Street project in the Bayshore corridor is in the planning stages.

The Third Street light rail project focuses on the revitalization of a neighborhood commercial hub through transit-supportive plans. It connects the City’s southeastern neighborhoods with the Financial District and Chinatown. This line will be a modern light rail line and will run all the way to the south edge of the city. At its north end, the line will travel through older industrial areas that have become more residential in the aftermath of the city’s late-1990s real estate boom. At its center, it will run through some of San Francisco’s most economically depressed areas, whose prospects planners hope will be improved by a light rail line. Under current plans, this extension will be served by a new line, the T-Third, which will be routed with the current K-Ingleside. J-Church cars will be extended during rush hours to provide extra service to the Caltrain station. Although this line has been planned



<sup>136</sup> 2006 Urbanomics Transit Agency Survey.

<sup>137</sup> San Diego Downtown Website; [www.sandiegodowntown.org](http://www.sandiegodowntown.org) .

since 1985, planners hope that it will be completed by 2011.

From 1997 to 2002, San Francisco's population increased by 2.8 percent and LRT ridership rose by 30 percent. The retail sales and food service per person for the city as a whole increased by 8.4 percent, but the number of establishments in the CBD decreased by 0.6 percent.

MUNI's current LRT system runs through San Francisco State University and next to the City College of San Francisco and the University of California at San Francisco; all three LRT stops are named for the respective schools and provide good connections to the rest of the MUNI public transit network.<sup>138</sup>

Historical measures of property value have increased when the property is located near LRT stations. Recently, there have been increases in the value of waterfront property and the Mission Bay property development near the Third Street LRT. As of August 2006, Third Street developments include 10,700 new residential units and 5 million square feet of commercial space, the largest development of which is Mission Bay and Hunts Point. Mission Bay Redevelopment consists of 6,000 residential units, 5 million square feet of office and commercial space, a new 43-acre University of California Research Campus employing 9,100 people, up to 750,000 square feet of retail, 49 acres of parks and recreational areas, community facilities and schools, and a 500-room hotel.



LRT Downtown (Source: Project for Public Spaces)

As of August 2006, the Martin Building Company is developing along the planned Third Street LRT extension. The proposed 2235 Third Street project would create mixed-use buildings containing approximately 242,185 square feet. The project will include 179 units of housing, a 6,926 square feet restaurant and cafe, 12,154 square feet of retail space along Third Street, and 2,300 square feet of daycare. Twelve percent of the total residential units will be reserved at Below Market Rate units following the City's Inclusionary Affordable Housing Program.<sup>139</sup>

Although there seems to be plenty of development along the planned LRT line, the construction activity on Third Street has limited further development in a transit corridor that could house close to 10,000 residential units in its northern half alone. In a city with a considerable housing scarcity, Third Street is one of the last areas untapped by developers. It's also the sort of transit-oriented development that environmentalists say can help slow Bay Area sprawl. The Third Street transit corridor has been held back by political bickering over the conversion of surrounding industrial land to housing, a process some believe could hurt blue-collar employment. The Third Street zoning is also tied up by a city effort to modify development rules in several neighborhoods, including places like the Mission, where gentrification is a bigger concern. Developers say the rail line will be underused if the city does not quickly standardize a system for processing development applications promptly. Currently proposed projects along Third Street are

<sup>138</sup> Light Rail Now Website; [www.lightrailnow.org](http://www.lightrailnow.org).

<sup>139</sup> 2235 Third Street Development.

anticipated to take three years to get through the approvals process—an ample amount of time for financing to fall apart, interest rates to increase and the market to shrink.<sup>140</sup>

## **San Jose**

Santa Clara Valley Transportation Authority (VTA) serves the city of San Jose. Its 42.2-mile light rail line, begun in 1987, is one of the longest to be built in the United States in 50 years. The original 9-mile route from Santa Clara through downtown San Jose was finished in 1988. In 1990, service to the Tamien Station, two miles south of downtown, began, while in 1991, the entire 20.8-mile line was completed. In 1999, VTA opened the 7.6-mile Tasman West line, connecting Mountain View with the existing Light Rail service. The TWA has 100 vehicles to access 62 stops.<sup>141</sup>

Despite the economic difficulty in Silicon Valley and TVA's budget constraints from the late 1990's to early 2000's, Phase I of the Tasman East extension was completed in 2001. In 2003, trains lost 19 percent of their Silicon Valley ridership with the high rates of unemployment; the prior level of 30,000 LRT weekday rider-trips dropped to 17,000.<sup>142</sup> A local news reporter argued that San Jose should have built a subway-elevated system, instead of an LRT, although a small city like San Jose could not afford such a project. He also argued that the system's speed is too slow. The same reporter stated that downtown San Jose should have been left off the LRT route: "Light rail was originally intended to avoid downtown and go to Mineta San Jose International Airport, which would have made it faster and possibly more popular." Others insist it was vital to run the LRT through downtown because all the bus lines cross there and the LRT has helped revitalize the area.<sup>143</sup>



San Jose LRT (Source: University of Czech)

Another critic of San Jose's LRT suggests that light rail is unsuitable in an automobile dependent urban areas such as San Jose, where jobs are spread throughout the area rather than concentrated downtown. He feels that San Jose made a major mistake in committing itself to such an inappropriate form of transit and is compounding that mistake by continuing to build light rail even as congestion increases and funds fall short of its operating budget for transit services.<sup>144</sup> Despite these difficulties, Phase II was completed in 2004 in combination with the Capitol Light Rail extension running south of Hostetter to Alum Rock Station. The Vasona Extension from Downtown San Jose to Winchester Transit Center opened in 2005.<sup>145</sup>

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<sup>140</sup> Ryan Tate, "Third Street rail brings housing along tracks But developers complain process is slow," San Francisco Business Times, June 23, 2006.

<sup>141</sup> Santa Clara Valley Transportation Authority Website; [www.vta.org](http://www.vta.org).

<sup>142</sup> Light Rail Now Website; [www.lightrailnow.org](http://www.lightrailnow.org).

<sup>143</sup> Ibid.

<sup>144</sup> Thoreau Institute Website; [www.ti.org](http://www.ti.org).

<sup>145</sup> Santa Clara Valley Transportation Authority Website; [www.vta.org](http://www.vta.org).

To make the LRT more attractive to riders, the VTA runs the Downtown Light Rail Shuttle (DASH). This free bus service travels on a fixed-route through downtown San Jose and connects with downtown Light Rail Stations as well as the San Jose Diridon Caltrain Station. The shuttle directly links Light Rail or Caltrain with employment locations such as Adobe Systems, PG&E, Wells Fargo, Comerica Bank, downtown hotels, and many other businesses. It also makes connections with San Jose State University.<sup>146</sup>

San Jose's population rose by 5.2 percent from 1997 to 2002. Although the area has gone through some recent setbacks, ridership of the LRT has increased by 15.8 from 1997 to 2002. One possible conclusion could be that riders shifted from the Silicon Valley to the Downtown area. With the increase in population and ridership, VTA is planning an additional 1.5 miles as part of a future extension to the Vasona Junction at Route 85 and Winchester Boulevard, pending available funding and the proposed transportation improvements in the Downtown East Valley area.

Even before the opening of the light rail, but after the announcement, San Jose saw a great deal of development along the proposed route. An employee from the Valley Transit Authority System noted that assemblages of development sites were taking place at a moderate rate along the route at this time. He also stated that new establishments such as retail, residential, hotels, and entertainment facilities were being built at a high rate, and that there was a slight increase in property values.<sup>147</sup>

During the construction phase, the LRT did not trigger much development. It did cause a slight percent increase in move-out of retail stores/restaurants, and a decline in business sales or rents because of the construction of the LRT. When the light rail service was in operation, San Jose saw an improvement in the downtown area.<sup>148</sup> From these reports, one can assume the light rail was a catalyst for the new development despite what critics suggested.

Since the opening of the LRT the downtown area has seen an increase in pedestrian traffic as well as in retail and restaurant sales and rents. From 1997 to 2002, San Jose's retail sales and food service expenditures per person increased by 18 percent, though the number of retail and food service establishments in the central business district decreased by a marginal 2 percent. The Valley Transit Authority System also stated that entertainment attendance rose and property taxes increased during this period.

In downtown San Jose, the light rail serves entertainment venues such as the Pavilion, San Jose Repertory Theatre, and new comedy clubs. It also serves Zanolto's Downtown Market, which opened in 2004 and has quickly become the prime, full-service grocery store in downtown San Jose and a key element in its revival. Hotel developments in the downtown area with easy access to the LRT include the Fairmont Hotel, the Saint Claire, the Hilton, and the Marriott.

Additionally, San Jose's Midtown Specific Plan focused on a 210-acre industrial, commercial area near the CBD for a mixed-use community. The Alameda, West Santa Clara Street, Los Gatos Creek, the properties south of Auzerais Avenue, and Meridian Avenue bound midtown. The Midtown Specific Plan was adopted by the San Jose City Council in 1992 and provides for the development of up to 2,940 residential units, 920,000 square feet of office space, 335,000 square feet of retail space, 305,000 square feet of

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<sup>146</sup> Santa Clara Valley Transportation Authority Website; [www.vta.org](http://www.vta.org).

<sup>147</sup> 2006 Urbanomics Transit Agency Survey.

<sup>148</sup> Ibid.

new industrial space, and 13.5 acres of parks. The Plan also includes the retention of approximately 500,000 square feet of industrial space.<sup>149</sup>

In addition to recent development in the downtown area, high-density residential projects have been constructed at outlying stations. The Phone-Chynoweth Commons point outside of the downtown area transformed underutilized park-and-ride lots into a parking lot, residential units, 4,400 square feet of retail space, and a day care facility. TVA is also doing joint development projects in outlying areas like the Tamien Child Care Center and Almaden Lake Village Housing.

## **Seattle/Tacoma**

Sound Transit was established in 1996, when voters in the urban areas of King, Pierce and Snohomish counties approved the local taxes necessary to fund the organization. The initial LRT segment is a 1.44-mile, 1 line Tacoma Link that opened in 2003 and connects the downtown Tacoma business, theater and university districts to the new Tacoma Dome Station. The Central Link light rail line, which is under construction as of August 2006, is a 14-mile route that connects downtown and southeast Seattle with the South 154th Street Station in Tukwila, located near the Seattle-Tacoma International Airport, which opened in 2003.



Seattle Planned LRT  
(Source: Light rail Now Website)

Downtown Seattle is linked by a 1.25-mile monorail, which was built in 1962 in time for the World's Fair. A proposed 58.3-mile/5 line Seattle monorail with 3 lines has yet to be designed or built. In 2005, Proposition 1 – a modified monorail construction project – lost by between 36 and 64 percent, with the result that the Monorail Green Line will not be built and the Seattle Popular Monorail Authority will be dissolved. As of August 2006, the current 1.25-mile route is closed for construction.<sup>150</sup> The new Central Link light rail line could replace the existing monorail for riders in the downtown Seattle area.

As of August 2006, Sound Transit is in the process of planning and constructing new light rail lines for the region. The Airport Link is a 1.7-mile route that will connect the initial segment to the airport by 2009, stopping at 12 stations and running 4.4 miles on elevated tracks, 2.5 miles in tunnels and seven miles at grade. The South Line extension to Sea-Tac Airport is also under construction. As of August 2006, a new system, North Link to University District, is in the planning stage.

The original Tacoma line has been a great success and has continued to exceed its ridership forecasts. By the end of September 2003, the average ridership for the first month of operation had

<sup>149</sup> City of San Jose Website; [www.ci.san-jose.ca.us](http://www.ci.san-jose.ca.us).

<sup>150</sup> Seattle Monorail Services Website; [www.seattlemonorail.com](http://www.seattlemonorail.com).

reached about 2,170 boarding on weekdays. "People now realize they can park for free at the Tacoma Dome Station and it's only seven minutes to downtown. That's exactly what the station was designed to do: Keep cars out of the downtown area."<sup>151</sup> It appears that the streetcar operation was even prompting occasional transit users to take advantage of the new service more frequently. People are using the LRT to make trips down to Freighthouse Square twice a week whereas they used to do it once a month.<sup>152</sup> Riders have been attracted to the option of not having to park downtown as well as the attractiveness of rail transit, characterized by comfortable, spacious vehicles; a fast, quiet, smooth ride; a well-defined, clearly understandable route; well-defined stations with useful amenities; and an ambience of reliability and safety.

Seattle's population increased by almost 7 percent from 1997 to 2002, while Tacoma's increased by almost twice as much or 12 percent. Retail service and restaurant sales increased in both cities; 19 percent in Seattle and 5 percent in Tacoma over this time period. The number of retail establishments in the CBD did not change in Tacoma and only increased by 1.6 percent in Seattle. The region's objective has been to stimulate vigorous real estate development and contribute to the ongoing revitalization of downtown Tacoma. This strategy apparently has been meeting with overwhelming success.



LRT in Downtown Tacoma  
(Source: University of Puget Sound)

In Tacoma, which has been helped considerably by the streetcar construction project and the introduction of regional "heavy" rail passenger service, the downtown had been experiencing a renaissance even before the Tacoma Link service. But since the LRT service began in late August of 2003, downtown businesses that managed to tolerate the long wait have been flourishing. Even as early as the fall of 2003, the LRT helped supply "an emerging commuter economy" located at the Dome District warehouse, which is home to more than three dozen shops, restaurants and offices.<sup>153</sup>

As of 2003 in Tacoma, the 108,000-square-foot shopping center, Freighthouse Square, reports that, "In the past month, many shop owners have seen an increase in business after more than three years of construction headaches that accompanied Sound Transit rail lines built on either side of the three-block-long building." While construction of the LRT system, plus other construction projects, had impaired access to adjacent businesses and made it hard for them to stay afloat, "That's all changing."<sup>154</sup>

With the anticipation of the light rail system in Seattle, downtown neighborhoods are developing plans to incorporate the stations. For example, the First Hill community established a strategy in their neighborhood plan, recognizing that fast, convenient,

<sup>151</sup> Tacoma News Tribune, September 2003; [www.thenewstribune.com](http://www.thenewstribune.com).

<sup>152</sup> Ibid.

<sup>153</sup> Tacoma News Tribune, September 26 2003; [www.thenewstribune.com](http://www.thenewstribune.com).

<sup>154</sup> Ibid.

reliable, and safe public transportation is critical to First Hill's success as an urban center. This plan includes a light rail station that boosts the neighborhood business district, invigorates Madison Street and adds to the livability and appeal of the area for residents and visitors.<sup>155</sup>

## **St. Louis**

Metro owns and manages the St. Louis Metropolitan region's public transportation system. The Metro system includes MetroLink, the region's light rail system, which consists of 28 stations and 38 miles. It serves St. Louis, St. Clair and Monroe counties, and its fleet consists of 77 vehicles. The initial route opened in July 1993 from the Lambert-St. Louis International Airport to the 5th and Missouri station in East St. Louis. The cost of the initial phase was \$464 million, of which the Federal Transit Administration supplied \$348 million.<sup>156</sup>



LRT and the Arch (Source: Travelocity)

In 2001, St. Clair County MetroLink extension opened, adding eight new stations. The cost was \$339.2 million with the Federal government and St. Clair County Transit District sharing the cost at 72 and 28 percent, respectively. The St. Clair County Transit District through a ½ cent sales tax made local funding available. In 2003, a 3.5-mile extension from Southwestern Illinois College to Shiloh-Scott station opened. Funding for this \$75 million extension was provided by a \$60 million grant from the Illinois FIRST (Fund for Infrastructure, Roads, Schools, and Transit) Program and \$15 million from the St. Clair County Transit District.<sup>157</sup>

In 2003, construction began on the Cross County MetroLink Extension. This 8-mile, nine station rail line will begin at Metrolink's existing Forest Park station and travel west to Clayton and south to Shrewsbury. It is scheduled to open for service in the fall of 2006.<sup>158</sup> As of August 2006, the design stage of the segment to Mid-America Airport was completed; when Phase 3 of the extension is complete, it will extend the MetroLink an additional 5.3 miles from the Shiloh-Scott station to Mid-America Airport.

In Thomas Garrett's report "Light-Rail Transit in America," the author states that his study of the property value impacts of St. Louis's MetroLink LRT shows that home prices in general rise as distance to a MetroLink station decreases. Even so, he dismisses the economic development influence of the LRT as a whole; repeatedly asserting it might perhaps "guide," but does not attract, development. He also states that St. Louis's LRT is an example of a successful system; the introduction of MetroLink service in 1993 succeeded in reversing the long decline of St. Louis transit. MetroLink also has helped

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<sup>155</sup> Seattle's Department of Transportation Website; [www.seattle.gov/transportation](http://www.seattle.gov/transportation).

<sup>156</sup> Metrolink Website; [www.metrostlouis.org](http://www.metrostlouis.org).

<sup>157</sup> Ibid.

<sup>158</sup> Ibid.

rejuvenate downtown St. Louis and is continuing to be a focus for TODs and economic development.<sup>159</sup>

The Metrolink serves Busch Stadium, the site of the St. Louis Fair, the Arch, and Riverboats. The St. Louis Aviation Museum is located at the airport, which is connected to downtown by the metro link. In 2004, the \$365 million Busch baseball stadium for the St. Louis Cardinals opened downtown, perhaps the most conspicuous sign of a downtown comeback.<sup>160</sup> The LRT also has a stop right next to the University of Missouri North Campus. MetroLink's CWE station serves the St. Louis College of Pharmacy and the Washington University Medical School. Furthermore, Southwestern Illinois College at Belleview is a step away from a stop on Metrolink.<sup>161</sup>

Commercial developers are beginning to benefit from the MetroLink as well. According to the developer of the Cupples Station renovation, the MetroLink stop was essential to the decision by Starwood Hotels and Resorts to locate a Westin Hotel downtown. They believe that their direct connection via the MetroLink to Lambert–St. Louis International Airport gives them a competitive lead over other downtown hotels.<sup>162</sup> Other new construction, such as the convention center hotel and new research laboratories at Washington University Medical Center might have happened anyway, but even so, make use of their nearby MetroLink stations. Yet more projects adjacent to stations are in the planning stages such as Washington Park.<sup>163</sup>

In 1999, the city called for \$1.2 billion of investment downtown. Since 2000, more than \$3.5 billion has surged into the area, 1,700 apartments and condominiums have been built, and 4,900 more are planned by 2008. Additionally, 26 restaurants have opened since 2004 and even the 120-year-old post office has been renovated at a cost of \$50 million, while at least \$300 million in development is happening in the square surrounding it. Several hotels have been built downtown during the past five years, including the Renaissance Grand across the street from the city's convention center. Soon, Ballpark Village will be located next to the Cardinals' new Busch Stadium. This \$700 million project will have residential and office towers, bars and restaurants.

The revival is visible beyond downtown. Forest Park, one of the largest urban parks in the country, underwent a \$94 million restoration project, which was completed in 2004. Lambert-St. Louis International Airport disclosed a \$1 billion expansion 2005.<sup>164</sup>

Despite the new development happening downtown and along the LRT route, TWA moved its corporate headquarters from downtown St. Louis to a suburban location, inaccessible from the MetroLink. TWA indicates that it had outgrown its downtown location. It is worth mentioning however, that downtown St. Louis has a very large amount of vacant office space, probably enough to accommodate the headquarters facilities of all major airlines.<sup>165</sup>

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<sup>159</sup> Thomas A. Garrett, "Light-Rail Transit in America, Policy Issues and Prospects for Economic Development," Federal Reserve Bank of St. Louis, August 2004.

<sup>160</sup> Charisse Jones, "More say, 'Meet me in St. Louis' as city shows signs of renewal," USA Today, May 10, 2006.

<sup>161</sup> Light Rail Now Website; [www.lightrailnow.org](http://www.lightrailnow.org).

<sup>162</sup> Peter Downs, "Classy Clayton" Construction News & Review, February 2001.

<sup>163</sup> Thomas A. Garrett, "Light-Rail Transit in America, Policy Issues and Prospects for Economic Development," Federal Reserve Bank of St. Louis, August 2004.

<sup>164</sup> Charisse Jones, "More say, 'Meet me in St. Louis' as city shows signs of renewal," USA Today, May 10, 2006.

<sup>165</sup> Peter Downs, "Classy Clayton" Construction News & Review, February 2001.

## 4.2 Europe

Since 2000, Europe has been developing light rail transit in cities of all sizes. Unlike in the United States, the establishment of light rail systems in Europe has been a relatively smooth process; citizens and government have been very accepting of LRT systems. As of the early 2000s, there were 170 light rail systems in Europe, with a total of 941 lines.<sup>166</sup> Germany alone accounts for more than half of these, with 56 systems.<sup>167</sup> "According to the European Rail Research Advisory Council business scenarios in 2002, light rail transit development is expected to double the length of existing systems and increase by 50% the number of LRT systems in Western Europe by 2020."<sup>168</sup> The European section of the report will focus on cities in England, Ireland, France, and Germany.



Dublin LRT

England and Ireland's light rail systems are building on the success achieved in Manchester, Sheffield, Birmingham, London, and Dublin. For example, in London, Mayor Ken Livingston, famous for his bold and successful pricing plan for reducing congestion in the city center, has also planned to construct a light rail in two central London corridors (Cross River and West London).

Throughout England, passenger journeys on the modern public transport light rail and tramway systems increased by 8.4 percent between 2003/04 and 2004/05. In all, 155 million journeys were made on the modern light rail systems in the year 2005.<sup>169</sup>

Advocates of light rail systems in the area maintain that benefits -- such as the social and economic effects of development, transit integration, and the environment -- be taken into account in a multi-option approach that makes it easier to justify investment in a light rail project.<sup>170</sup> In 2001, the Department of Transport for England produced "The Future of Transport" white paper which reports on factors that will shape travel and transport over the next thirty years. It sets out how the Government will react to the increasing need for travel, by capitalizing on the benefits of transport while minimizing the negative effects on people and the environment.<sup>171</sup>

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<sup>166</sup> "Light Rail and Metro System in Europe" European Rail Research Advisory Council, 2002.

<sup>167</sup> Ibid.

<sup>168</sup> ERRAC: Strategic Rail Research Agenda 2020. First Report of the European Rail Research Advisory Council, September 2002.

<sup>169</sup> England's Department of Transport; [www.dft.gov.uk](http://www.dft.gov.uk).

<sup>170</sup> Mike Knutton, "UK Cities Clamour For New LRT Funding," Rapid Transit Review International Railway Journal, November 2001.

<sup>171</sup> England's Department of Transport; [www.dft.gov.uk](http://www.dft.gov.uk).

While implementation of LRT and public tramway plans has a long term planning horizon, with many beneficial economic effects, a policy action of Mayor Ken Livingstone of London had an immediate impact on traffic congestion, pedestrian volumes, and business viability in the city center. A description of this program and its impacts precedes that of England's major light rail systems.

## **London**

### London's Congestion Charging District

Mayor Ken Livingstone of London introduced congestion charging in central London on February 17, 2003. His actions were based on a belief that congestion charging was a



Central City London Traffic (Source: BBC)

necessary action to stem the severe traffic congestion in central London, amongst the worst in all of Europe. Drivers spent 50 percent of their time in traffic. Every weekday morning, the equivalent of 25 busy motorway lanes of traffic tried to enter central London. It had been estimated that London lost between \$3.5–7.5 million every week in terms of lost time resulting from congestion.<sup>172</sup> As of August 2006, the Mayor has introduced an extension of this project to cover most of

Kensington, Chelsea and Westminster. This extension will take in effect February 2007.

Drivers pay to drive in the congestion zone via Internet, phone, or person. Discounts are available for the disabled, residents of the zone, alternative fuel users, drivers carrying more than 9 passengers, and roadside recovery vehicles. For others who do not pay, a penalty fine is in effect. Money raised from congestion charging is put towards public transit projects.

Positive results from the congestion charging policy have been reported since 2003. Transport for London, the reporting agency, stated that declines in congestion averaged 26 percent over the period since introduction of the plan. Public transport continues to effectively assist displaced car users, and bus services continue to gain from improved reliability and ongoing investment.<sup>173</sup>



Congestion Charging Area (Source: Friends of the Earth)

Economic trend data and comparative analyses reveal that there are no significant net impacts from the plan on the central London

<sup>172</sup> Transport for London Website; [www.tfl.gov.uk](http://www.tfl.gov.uk).

<sup>173</sup> Transport for London, "Central London Congestion Charging, Fourth Annual Monitoring Report," June 2006.

economy. Businesses performance in the charging zone was significantly better than in the rest of London. Although year-over-year retail sales saw a sharp decline during July to September 2005, following the London bombings, by early 2006 this trend was overturned resulting in full recovery with an annual growth rates above that being seen in the rest of the Country. The majority of charging zone businesses continue to acknowledge that decongestion has created a more enjoyable working environment and easier commutes for employees using public transport. Transport for London indicated that amongst businesses in the charging zone, there were more supporters of the congestion charge than challengers.<sup>174</sup> The plan produced net revenues of \$229 million in 2005/6, reflecting increased charges from July 2005. These are being spent largely on improved bus services within London.<sup>175</sup>

Another positive response to the plan has been voiced by London's First, a business group whose members account for 22 percent of the city's Gross Domestic Product. A survey of members performed in 2003 found that a majority considered the policy to have an overall positive impact on business. One member stated that his delivery time had been cut in half, which saved him money.<sup>176</sup>

An opposing view from the London Chamber of Commerce and Industry stressed the negative effects of congestion charges. The organization has produced numerous reports, which include surveys and interviews of businesses that have been affected by this policy. In "The Impact of Congestion Charging on the Central London Restaurant Sector," the Chamber stated that 78 percent of respondents reported a decline in customers since the charge was introduced, and 54 percent said the charge was all or mostly to blame.<sup>177</sup> A third of the respondents said they are considering moving out of the congestion zone and 80 percent are opposed to the extension of the zone.<sup>178</sup>

The decrease in business activity could be due to a number factors such as the London bombing, the general economic slowdown, and a decrease in tourism. In the Chambers survey "The Impact of Congestion Charging on the Central London Retail Sector-- Eighteen Months On," respondents viewed congestion charging as having a greater negative impact on their business than other factors.<sup>179</sup> The result of this survey also shows a small change in shopping patterns, with some increasing while others decreased.<sup>180</sup> About one fifth of the retailers have changed their working hours due to the congestion charge.

Other organizations supportive of the Chamber's view include the Royal Institute for Chartered Surveyors, which found that more than 7 out of 10 businesses in the entertainment sector have reported the charge has had an adverse impact on their business.<sup>181</sup> In direct conflict with the Mayor, the Department of Transportation has stated that the zone extension will run a deficit until 2010.<sup>182</sup>

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<sup>174</sup> Ibid.

<sup>175</sup> Ibid.

<sup>176</sup> Todd Litman, "London Congestion Pricing- Implication for Other Cities" Victoria Transport Policy Institute, January 2006.

<sup>177</sup> London Chamber of Commerce and Industry, "The Impact of Congestion Charging on the Central London, Restaurant Sector," September 2004.

<sup>178</sup> Ibid.

<sup>179</sup> Ibid.

<sup>180</sup> Ibid.

<sup>181</sup> Royal Institute for Chartered Surveyors, "The Impact of Congestion Charging on Property," February 2004.

<sup>182</sup> London Chamber of Commerce and Industry, "Going West- Recommendations based on Interviews with the Directors of 200 Companies in the Western Extension Zone," February 2006.

Although there have been negative responses to congestion charging and the extension plans, the Mayor of London has put the plan into effect. He believes that positive results outweigh negative ones and has been willing to compromise by shortening the congestion charging time to 6 pm.

## Docklands

The Docklands section of London proves that light rail can be a significant element in urban renewal projects.<sup>183</sup> In 1981, the British Government designated the area an Enterprise Zone with the aim of achieving physical, economic, and social revitalization. The London Docklands Development Corporation (LDDC) was established and the land was exempted from taxation to promote new construction and economic development. By the time of its dedesignation in 1998, the LDDC could lay claim to building 25 million square feet of commercial floor space and 24,000 new homes. Some 85,000 persons now work in the London Docklands.



Dockland LRT  
(Source: [www.londonpagesonline.com](http://www.londonpagesonline.com))

In order for the Docklands to become a central business district it needed a transit infrastructure to match. Construction began on the Docklands Light Railway in 1984 and the system was opened in 1987.<sup>184</sup> Serco Docklands LTd/CGL Rail currently operates Docklands Light Railway. Its initial cost was \$138 million. Since opening, three line extensions have been built: to Banking in 1991, which connects to the London Underground, to Beckton in 1994, and to Lewisham in 1999. As of 2006, a new extension is being built to Woolwich via the London City Airport.<sup>185</sup>

Now redeveloped principally for commercial and residential uses, the Docklands has experienced a remarkable transformation from derelict industrial land to London's second financial center and one of Europe's biggest concentrations of skyscrapers. Luxury flats and executive offices led to high end retailing, particularly in the Canary Wharf area. In the corridor served by Light Rail, populated by public housing estates, the deterioration of these neighborhoods was stopped by renewal policies, and the subsequent revitalization in turn led to greater rail ridership. The gap between office rents in the city center and the Docklands is currently declining, while improvements in the transit infrastructure from the Lewisham and Jubilee line extensions are accelerating these tendencies.<sup>186</sup>

As of 2006, the light rail is a 19-mile railway with 38 stations and 94 vehicles. Ridership is at its highest level with further increases in demand management forecasted. The system now carries 55 million passengers a year and is expected to rise to 80 million by 2009.<sup>187</sup>

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<sup>183</sup> LiRa: International Network of Light Rail Cities, State of the Art, by Buck Consultants International; assigned by The European Union, North Western Metropolitan Area Interreg II C Programme, December 2000.

<sup>184</sup> Ibid.

<sup>185</sup> England's Department of Transport; [www.dft.gov.uk](http://www.dft.gov.uk).

<sup>186</sup> LiRa: International Network of Light Rail Cities, State of the Art by Buck Consultants International Assigned by: The European Union, North Western Metropolitan Area Interreg II C Programme, December 2000.

<sup>187</sup> Transport for London: Dockland Website; [www.tfl.gov.uk](http://www.tfl.gov.uk).

## Croydon

Croydon Tramlink, England's number one tramway, carries 22 million passengers a year over an 18.5-mile modern tramway system covering South London. The line is largely on an east-west axis through a central loop around Croydon, branching out from Croydon to Wimbledon, Beckenham and New Addington. Tramlink has been a huge success in getting people out of their cars and has proven to be very popular. It is also considered to be the most reliable public transport service in the country.<sup>188</sup>

Croydon Tramlink is operated by Tramtrack Croydon/FirstGroup. It is a street tramway with on street running in Croydon and segregated sections in outlying areas. It opened in May 2000 at a cost of \$360 million.<sup>189</sup> In 2004, the Croydon system was accredited with attracting \$2.81 billion in investment and stimulating higher property prices.<sup>190</sup> In addition, in parts of its service area the system has been regarded as contributing to the reduction in unemployment by as much as 35 percent.<sup>191</sup>

There have been many developments along the Croydon line. As of August 2006, the Central Shopping Center, with 820,000 square feet of retail space, opened with extra tram stops. It includes a new 160,000 square foot House of Fraser department store, a 21,000 square foot Zara store, a 215,000 square foot Debenhams department store, and a 50,000 square foot Next store. The Center serves 4.67 million customers from North Surrey, West Kent, East Sussex and the whole of South London.<sup>192</sup>



Croydon Downtown Tram (Source: BBC)

Park Place, a \$465 million new retail development, will provide Croydon town center with an additional 914,600 square feet of retail space for more than 130 retailers. Along the line, Grants Entertainment was a derelict department store redeveloped into a multi-screen cinema and entertainment venue. There have been numerous new small businesses and housing units regenerated in run down shopping areas now served by the Croydon Tramlink.<sup>193</sup> Supporters say that renewal of central Croydon has long been regarded as one of the best retail opportunities in Greater London, with its excellent transport connections to central London and a catchment area of 1.5 million people.<sup>194</sup>

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<sup>188</sup> Croydon Unofficial Tram Website by S.J. Parascandolo; [www.croydon-tramlink.co.uk](http://www.croydon-tramlink.co.uk).

<sup>189</sup> England's Department of Transport; [www.dft.gov.uk](http://www.dft.gov.uk).

<sup>190</sup> September 2004 issue of *Tramways & Urban Transit*.

<sup>191</sup> Light Rail Now Website; [www.lightrailnow.org](http://www.lightrailnow.org).

<sup>192</sup> Central Shopping Center Website; [www.centrale.co.uk](http://www.centrale.co.uk).

<sup>193</sup> Stephen J. Parascandolo (Stevenage, Herts, UK.)

<sup>194</sup> Bigger slice of Park Place for developer By Carolyn Cummins, *Commercial Property Editor*, July 20, 2005.

Further from the center, in South Norwood Country Park, the sports venue Croydon Arena is situated and served by a Tramlink stop. After the Arena stop, the Beckenham Junction line veers to the right through residential areas, while the Elmers End branch continues on.

### **Birmingham-Wolverhampton**

Midland Metro controls the light rail system which links England's second largest city, Birmingham, with Wolverhampton, a growing city in the West Midlands. Route 1 stretches 12.58 miles, running in the main line of the old Great Western Railway. Traversing areas of formerly derelict land, it has made them potentially developable by improving access. With much of the region's former manufacturing gone, the Birmingham city center is acting as the economic engine. With the LRT, housing demand has spilled outward from the center and improved transit access has widened resident's opportunities for shopping and leisure. Whereas housing prices had fallen before, they are now stabilizing, and with the system extensions, suburban shopping centers have benefited.



Birmingham-Wolverhampton LRT  
(Source: City of Wolverhampton)

The system is planning three new routes. The proposed Airport route will link other Metro routes in Birmingham with the Birmingham International Airport, which handles nine million passengers yearly. Visitors traveling to the National Exhibition Center, popular for concerts, exhibitions and events, will also benefit from this modern, frequent transport system. The second new line will continue from the proposed Birmingham City Center extension at Edgbaston, down Hagley Road to Bearwood and Quinton, while the third line will run through business, leisure, retail and residential areas serving major hospitals, and link communities along the way.

### **Greater Manchester**

Manchester Metrolink is operated by Altram. It is a suburban system with vehicles resembling trains, which require high platforms. Opened in 1992, at an initial cost of \$252 million, the main routes meet on street in central Manchester at Piccadilly Gardens. The route runs through the city center, shopping areas, Chinatown, and commercial development (Salford Quays). An extension to Eccles was opened in March 2000 at a cost of \$288 million.<sup>195</sup>

Manchester city center has been the main beneficiary of the Metrolink investment, but secondary centers that were initially concerned about losses have also seen some improvements



LRT Vehicle (Source: Answer.com Website)

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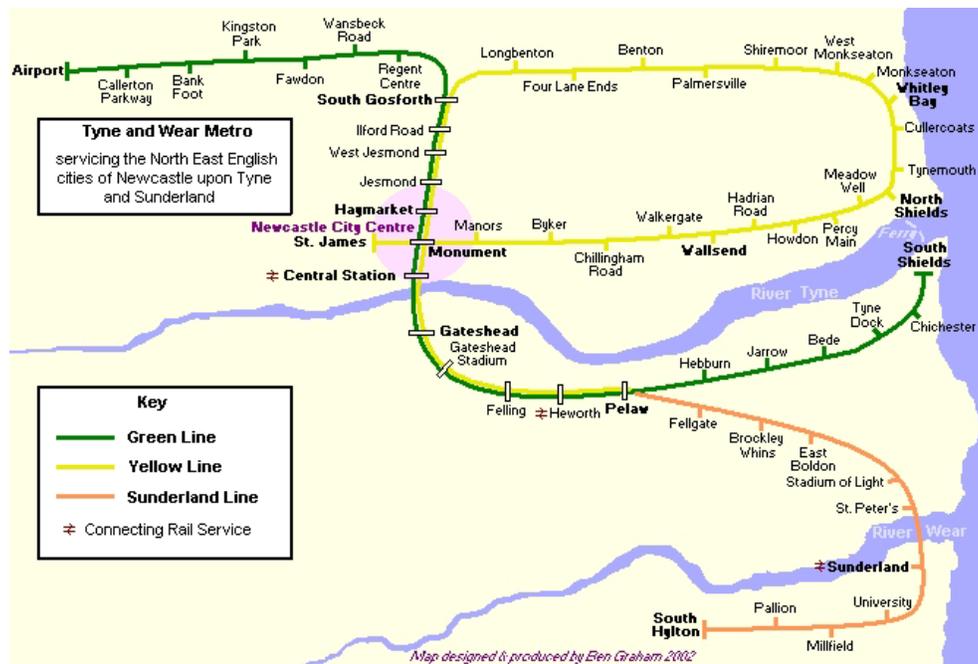
<sup>195</sup> England's Department of Transport; [www.dft.gov.uk](http://www.dft.gov.uk).

with enhanced accessibility to Manchester. Manchester redevelopment funding, a consequence of IRA bombing, has been successful because it was closely integrated with city center light rail investment. Although a University based study showed no substantial positive effect on property values or rents, the Greater Manchester Docklands served by on street running has been highly successful and development pressures continue to be intense.

Daily patronage on the Metrolink is around 52,000 passenger trips, while annual patronage is 18.8 million passenger trips. Research has suggested that at least 2 million car journeys have been taken off the road each year along the Metrolink corridor.<sup>196</sup>

### **Newcastle (Tyne and Wear)**

Newcastle's Tyne and Wear Metro was England's first light rail system, with the original sections opened between 1980 and 1984. The system makes use of former suburban railway lines to Whitley Bay via North Shields and to Jesmond, Gateshead and South Shields, and with a short newly built extension to Newcastle Airport. It is linked by two tunnel sections beneath the city center and by a new bridge over the River Tyne. A newer extension takes the line over tracks shared with main line rail services to Sunderland, and then to South Hylton along a re-opened railway line. The Tyne and Wear Metro is the longest light rail system in the country with 47.5 miles.<sup>197</sup>



System Map (Source: B W Graham)

Regeneration impacts of the Metro system were initially limited because implementation of the Enterprise Zone program during the 1980s and 1990s focused on areas that were not served by the Metro line. The Metrocentre retail development was built without light rail access, which eventually led to a loss of business to city center retail (Eldon Square)

<sup>196</sup> Metro Link Website; [www.nexus.org.uk](http://www.nexus.org.uk)

<sup>197</sup> The TramsCo, United Kingdom; [www.thetrans.co.uk](http://www.thetrans.co.uk).

served by Metro. Much new development had been auto-oriented and retailing had settled on brownfield sites located away the Metro network. However, Newcastle city center may not have developed as intended without Metro and the center now has a very strong concentration of retail and leisure business in the quayside area of Eldon Square.

Peripheral business park development, which houses offices for call centers, benefit from some public transit access, but investment has now shifted to the city center, in both Newcastle and Sunderland, where the revitalization of space above shops and offices has gained interest. While Newcastle is the business and cultural focus of the region, Sunderland attracts workers and shoppers to its center. The Metro extension was initially feared by small retailers as a route that would divert shoppers away from Sunderland to the Newcastle city center. The fear has not materialized as a major covered shopping mall (The Bridges) has been expanded with a Debenhams department store, downtown pedestrian counts have held up, and there has been no evidence of a shopper outflow from Sunderland to Newcastle.

In 2001, a 15 year plan for the development of public transport in Tyne and Wear was released as the report "Towards 2016: The Challenge." The report identifies the system's mission as one of high quality public transport for Tyne and Wear that will assist economic growth and social inclusion through increased levels of sustainable mobility.<sup>198</sup>

## **Sheffield**

The Sheffield LRT, known as the Supertram, is owned by South Yorkshire Passenger



Sheffield LRT (Source: University of Leeds)

Transport and has been operated by Stagecoach Holdings since 1997. It is a street tramway with on-street running in the center of Sheffield and with use of old rail alignments and segregated track outside the center. It opened in 1994 at a cost of \$432 million.<sup>199</sup> Along 19 miles of rail, the system travels via the city center to stops at Fitzalan Square, Castle Square, and Cathedral.<sup>200</sup> Since opening of the system, the central business district has gained economically with retail sales and building occupancy rates increasing. Growth of other areas in the Supertram's corridors appears slow and not obviously higher than in parts of Sheffield not served by the system.<sup>201</sup>

Line 2 of the system connects the city center to the periphery located in the Lower Don Valley, the main center of the former steel industry where an immense shopping center had been built. Additional development has been realized along the Supertram line consisting of corporate and public employment, as well as leisure amenities. Since 2000, no large housing projects have been built along the Supertram corridor. The

<sup>198</sup> Metro Link Website; [www.nexus.org.uk](http://www.nexus.org.uk)

<sup>199</sup> England's Department of Transport; [www.dft.gov.uk](http://www.dft.gov.uk).

<sup>200</sup> Light Rail Transit Association; [www.lrta.org](http://www.lrta.org).

<sup>201</sup> United Kingdom, Study Tours- Transport Oriented Development and the Use of Light Rail in UK's conurbations. Department of Transit, 2005.

development that did take place consisted of demolishing blocks of flats that were within the system's catchments area. It is unknown whether Supertram could have contributed to another way of regeneration in this area. With regard to office development, Meadowhall on line 2 is having some degree of economic benefit. Supertram helps by attracting foreign investment, an example of one development that was partially triggered by the system is a newly built large-scale call center in the Lower Don Valley.<sup>202</sup>

## **Nottingham**

The Nottingham single-line light rail system is operated by the Nottingham Tram Consortium under contract to Arrow Light Rail Ltd. It includes on-street running in the center of Nottingham, with use of existing rail alignments on a segregated track north of the center. It opened in March 2004 at a cost of \$324 million.<sup>203</sup> In 2005, 8.4 million trips were made in the first 12 months of service, considerably above the forecasted 7.5 to 8 million. In the second year, 9.7 million trips are expected, compared to the forecasted 9 million. With a 15.5 percent increase, ridership is well ahead of even the most optimistic calculations.<sup>204</sup>

Nottingham, one of the few cities to have reduced car trips to its central area, is seen as having one of the most exciting projects. The LRT system will link the city northwards to Hucknall, and to a junction on the M1 where car parks will be provided. Nottingham is becoming very much a regional hub and transit is helping with the creation of a central business district.<sup>205</sup>



Nottingham LRT Vehicle  
(Source: [www.bombardier.se](http://www.bombardier.se)  
& TAS Partnership)

<sup>202</sup> LiRa Pilot 3: Light Rail, Economic impact and real estate development Commission by: LiRa: The International Network of Light Rail Cities Nijmegen/Amersfoort, December 2000.

<sup>203</sup> England's Department of Transport; [www.dft.gov.uk](http://www.dft.gov.uk).

<sup>204</sup> Light Rail Transit Association; [www.lrtta.org](http://www.lrtta.org).

<sup>205</sup> Victoria Transport Policy Institute, May 2006; [www.vtpi.org](http://www.vtpi.org).

## **Dublin**

The Railway Procurement Agency (RPA) controls Dublin's light rail system (Luas). The system consists of 2 lines, the Green line and the Red line. The 5.6 mile Green line opened in June 2004, along the route of the now-closed Harcourt Street railway from the city center to Sandyford, serving Balally, Dundrum, Milltown, and Ranelagh. The 9.3 mile Red line opened in October 2004, traveling from Connolly Station in downtown Dublin, through the north inner-city, crossing the river south at Heuston rail station, and serving the communities of St. James, Rialto, Drimnagh, Bluebell, Red Cow, Cookstown, and Tallaght.

RPA is responsible for planning and managing all commercial opportunities on the Dublin Light Rail system. Their aim is to develop opportunities that will serve the passenger (e.g. retail space), increase utilization of assets (e.g. advertising space) and benefit the community (e.g. public art). The supplementary income derived from these initiatives is reinvested back into the system, thereby allowing Luas to continuously improve service. Luas has attracted considerable ridership and already achieved particularly high awareness in the community. A recent market survey revealed that more than 90 percent of people living within the catchment area could identify which stop was closest to their home, 85 percent were in favor of the service and felt it would improve travel to the city, and 89 percent felt it would be better for the environment. In 2005, the annual ridership reached 22 million. The light rail serves the hospital, the National Museum of Ireland, the Abbey and Civic theaters, the Square shopping center, civic offices, and the Library.

Even before its opening, but after the announcement, Dublin saw a great deal of development along the proposed route. A planner from the Railway Procurement Agency noted that assemblages of development sites were taking place at a very high rate at this time. He also stated that new establishments were being planned, such as retail, and that an increase in property values occurred after the announcement.

During the construction phase, the LRT did not stimulate much development. Although it resulted in assemblage of development sites, it created only a modest increase in new retail space. While there was a decline in retail and restaurant sales during construction, property values increased. Since opening of the LRT in 2004, pedestrian activity has risen 25 percent in the downtown area. Both retail and restaurant sales and rents have also since increased, as has tourism and other visitation.

As of 2006, the Luas Green line will be extended to 25 miles. Through an innovative agreement between the RPA, Dún Laoghaire Rathdown County Council, and a group of private developers, more than half the cost of the extension will be provided by private sector contributions. The extension is planned to open in 2010.

## **France**

During the 1970s, heavy-rail metros were constructed in French cities like Lyon, Lille, Marseille, and Toulouse to expand public transport systems. Because rail was expensive, some cities found that a tramway would be a more affordable fixed-rail service option. Moreover, most French cities did not have the population to support a heavy rail metro system.<sup>206</sup> In the mid-1970's, the French Minister of Transport declared a new policy to promote consideration of light rail transit as a viable alternative for medium-sized cities and guaranteed to provide national funding for this option.<sup>207</sup> As of 2006, light rail systems were operating in Montpellier, Nantes, Orleans, Rouen, Strasbourg, Bordeaux, Lyon, Mulhouse, Nice, and Paris (a suburban line).

## **Montpellier**

To support a rapidly growing city of 228,000 residents that is a center of high tech research and development, Montpellier built a light rail system, the first line opening in 2000. As of 2006, two light rail lines are in operation and one more is planned. The TAM (Transport de l'Agglomération de Montpellier) manages the city's public transportation. Line 1 travels from the northwest to the southeast via the center city, while Line 2 travels through the center city from the northeast to the southwest. Proposed Line 3 will travel west to southeast via the center city and is expected to open in 2010.



LRT Vehicle (Source: [www.lightrail.nl](http://www.lightrail.nl))

75,000 people live within a five-minute walk of a tram stop in Montpellier.<sup>208</sup> The tramway connects the most important centers of activity -- university, schools, hospitals, and city center with residential areas. Economic gains have been seen mostly in the center where they have been strengthened by developments like the Congress Center.<sup>209</sup> A substantial number of new multifamily residences have been built on vacant land sold by the city along the light rail line. Around some stops, offices, retail

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<sup>206</sup> South Yorkshire Passenger Transport Executive: Comparative Performance Data from French Tramway Systems (final report). Egis Semaly Ltd (Public Transport Consultants and Engineers), 2003.

<sup>207</sup> Geln D. Bottoms, "Continuing Developments in Light Rail Transit in Western Europe: United Kingdom, France, Spain, Portugal, and Italy," Federal Transit Administration, 2000.

<sup>208</sup> Railway Technology-Montpellier Light Railway; [www.railway-technology.com](http://www.railway-technology.com).

<sup>209</sup> Carmen Hass-Klau, Graham Crampton and Rabia Benjari, "Economic Impact of Light Rail," Bergische Universität Wuppertal, 2005.

shops, cafes and restaurants have emerged in new buildings. By selecting a route with existing population and employment densities, as well as vacant sites for new construction, Montpellier has been able to capture a significant level of ridership as well as shape the form of urban development.

## **Nantes**

Nantes, a city of 450,000 residents, was the first French city with a new light rail system in 1985. Since then, the system has become the backbone of public transport with 44 percent of all public trips made by light rail.<sup>210</sup> As of 2006, Nantes had four LRT lines and one ring route line proposed. Line 1, which travels north to west via the center city, stimulated development of housing, cultural, sport, leisure, and other service facilities. Line 2, which travels south to north via the center city, had a strong economic effect on the center. A large bookseller and other big businesses moved in, the share of higher education increased, and city center land uses were stabilized. In the light rail line corridor, 25 percent of all new offices, 13 percent of new commercial buildings, and 25 percent of new residential dwellings were built within 1200 feet of the line, between 1985 and 1995.<sup>211</sup>

Overall, land with tram access is more expensive and offices seek locations in the tram corridor. Both Line 3 (opened in 2004), which travels northwest to southeast via the center city, and Line 4 (opened in 2006), which travels southeast to the center city, are too new to have a visible impact on the urban environment. However, planners expect they will eventually generate fewer small shops and more service activities along their routes. In general, construction has drawn a high concentration of public facilities and, most agree, more private investment is needed.



Nantes LRT  
(Source: [www.lightrail.nl](http://www.lightrail.nl))

New retail establishments in the tram corridors account for only 13 percent of all new retailing approved for Nantes.<sup>212</sup> Because of the concentration of businesses around the more accessible areas at stops, disadvantaged portions of the tramlines may progressively lose retailing and convert to institutional or other tertiary uses.

## **Orleans**



Orleans LRT  
(Source: [Parson Brinckerhoff](http://Parson.Brinckerhoff))

Orleans, a city of 116,000 residents, has a single-line light rail system of 11 miles with 24 stops, which was opened in 2000. The line runs north to south via the city center. In 2002, annual passenger ridership was 9,250. Operation of the tram system has not been smooth, leading to less than anticipated ridership and continued complaints about its noise.

Prior to and during the first few years of operation, about 30 percent of all shops changed ownership and property rents

<sup>210</sup> Nantes: The Renaissance of the Light Rail Transit System; [www.eau.de](http://www.eau.de).

<sup>211</sup> Graham R. Crampton, "Economic Development Impacts of Urban Rail Transport," Reading University, Paper prepared for the ERSA2003 Conference, Finland, August 2003.

<sup>212</sup> Carmen Hass-Klau, Graham Crampton and Rabia Benjari, "Economic Impact of Light Rail," Bergische Universität Wuppertal, 2005.

were increased. Apartment prices along the line declined during the construction phase, but have since risen in concert with residential property elsewhere. New buildings have emerged around suburban stations, including apartments, houses, a large supermarket, and other commercial structures including a budget hotel and fast food establishments.<sup>213</sup>

In general, the Orleans LRT has not received the same acceptance as other French systems, with an especially troubling negative aspect seen in the decline of housing rents along the line.

## **Paris**

The Paris light rail system is a suburban route surrounding the city center. Paris initiated light rail investment to 'connect the radials,' and since the 1990's, two connections have been opened. One line runs between the office area of La Defense and the suburb of Issy -Val de Seine, which will later be extended to the north. The other line runs between the Banlieu town of St Denis and the Metro terminus of Bobigny-Pablo Picasso.<sup>214</sup>



Paris's LRT (Source: Simon P Smiler)

The business area of La Défense is built along a central boulevard (le Parvis). With 38 million square feet of office space, it represents the largest concentration of offices in Europe and one of its major financial centers. The connecting suburb of Issy-Val de Seine is home to prominent French companies, such as L'Oreal and Louis Vuitton, and is also one of France's more densely populated municipalities. When the line opened in 1992, a dramatic shift occurred from bus to LRT ridership that continues to the present day, with LRT service carrying 100,000 passengers daily.

Because of the success of both lines, an additional LRT route is planned for the Paris suburbs. The third line, expected to cost \$188 million, will run from Pont du Garigliano-Boulevard Victor via Porta De Versailles to Porte d'Ivry and carry 70,000 daily passengers.<sup>215</sup> It will open in 2008.

## **Rouen**

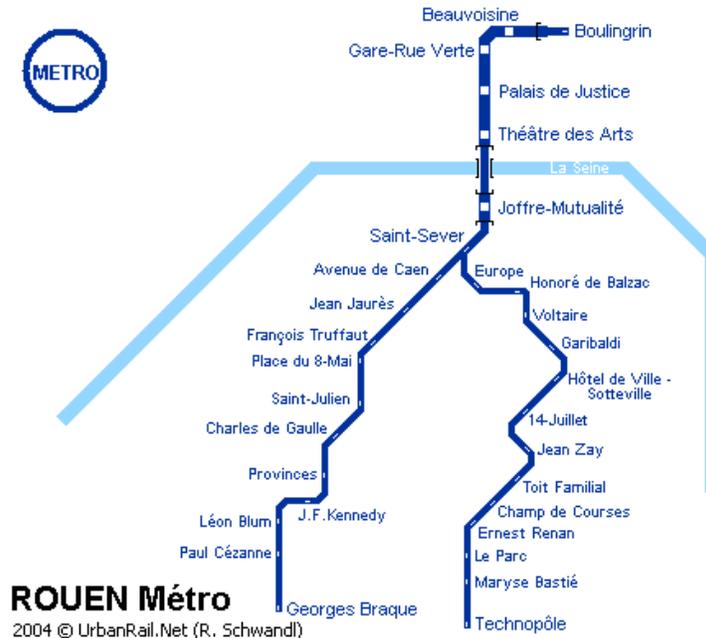
Rouen's two-route system, termed a "Metro" but technically a light rail service, opened in 1994. It serves central Rouen, a city of 107,000 persons, and three southern suburban towns. The system was the third in France to acquire Alstom's then-revolutionary TFS (Tramway Français Standard), following Grenoble and Paris's T1 line. The system operator is TCAR (Transportes en Commun de l'Agglomeration de Rouen).

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<sup>213</sup> Carmen Hass-Klau, Graham Crampton and Rabia Benjari, "Economic Impact of Light Rail," Bergische Universität Wuppertal, 2005.

<sup>214</sup> LiRa: International Network of Light Rail Cities, State of the Art Written by: Buck Consultants International Assigned by: The European Union, North Western Metropolitan Area Interreg II C Programme, December 2000.

<sup>215</sup> Glen Bottoms, "Continuing Developments in Light Rail Transit in Western Europe: United Kingdom, France, Sopain, Portugal and Italy," Federal Transit Administration.



Line 1 travels from the northeast to the south via the city center, while Line A/D travels west to south via the city center. Along the lines, rent and house prices have risen, but the impact on the city center is less clear. This may be attributable to the use of a tunnel in the center that precludes an extension of the pedestrian area. Changes in land use have occurred at end stops, from industrial and warehouse uses to offices, and on-route to the center where new buildings, offices, housing and schools have been erected at many stops.

### **Strasbourg**

Strasbourg, a city of 250,000 residents, has one of the most distinctive light rail systems in the world. The first section of this line opened in 1994 and ran from Hautpierre-Maillon in the north-west, via a city center tunnel serving the Gare Central, before turning south to serve the main hospital, a major sports stadium and the college, terminating in the south-eastern suburb of Baggersee.<sup>216</sup> In 1995, Line A was developed as an extension of the original line. During construction of Line A, retail turnover declined 5 to 35 percent along the line; upon opening, rents and property prices went up.<sup>217</sup>

<sup>216</sup> Railway Technology website; [www.railway-technology.com](http://www.railway-technology.com).

<sup>217</sup> Graham R. Crampton, "Economic Development Impacts of Urban Rail Transport," Reading University, Paper prepared for the ERSA2003 Conference, Finland, August 2003.

In the city center, tram construction was combined with an extension of the pedestrian area. Before Line A opened, 88,000 people were counted on foot, but after one year of service, pedestrian numbers rose by 66 percent to 146,000. By 1998, prices for offices in Strasbourg were 10 to 15 percent higher than offices in similarly sized cities while, according to the Director of the Chamber of Commerce, this comparative advantage has continued to the present.<sup>218</sup>



Strasbourg LRT with Pedestrian Area  
(Source: Parson Brinckerhoff)

When Line B opened in 2000, a 32 percent increase in pedestrian activity occurred in one year. Since then, the numbers have diminished, but 2002 represented a 47 percent increase in Saturday pedestrians over ten years prior. While the impact of increased foot traffic on retail sales has not been measured, the sheer volume of pedestrian activity undoubtedly has had a positive effect. The light rail has also increased visitation to the city and it is generally agreed that the quality of life has improved. One of the main benefits has been to render a large part of the center city auto-free, or at least free from through traffic.<sup>219</sup>

In regard to retail activity in the city center, the opening of Line A and the increase in pedestrian volumes resulted in a rise in rents and property prices along major shopping streets. Some small shops found it impossible to pay high rents and only large chains or very high-end shops -- such as Hermes, Bally, Gucci or Cartier -- could afford them. As of 2003, 41 percent of buildings located along the tramline in the center city had undergone a transformation. Renovation of the frontage was found in 27 percent of buildings, and a change in use had occurred in 18 percent of them. In the southern section of the line, 30 percent of buildings had undergone a change.<sup>220</sup>

Line E is scheduled to open in 2008, while an extension to the original lines is planned for a 2010 opening.

## **Germany**

Germany has the most light rail systems in all of Europe.<sup>221</sup> After World War II, both East and West Germany transformed old heavy rail into modern light rail systems. With the exception of Hamburg, most cities have converted and expanded basic streetcar systems into light rail transit. Actually, light rail started in Frankfurt in 1968, when Siemens developed a rail car called the U2.<sup>222</sup> As of 2006, there were about 67 light rail systems in Germany, ranging from tramway-type systems to interurban and light rail operations. Examples of German systems are located in Bremen, Freiburg, Hannover, Bochum-

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<sup>218</sup> Ibid.

<sup>219</sup> LiRa: International Network of Light Rail Cities, State of the Art Written by: Buck Consultants International Assigned by: The European Union, North Western Metropolitan Area Interreg II C Programmed, December 2000.

<sup>220</sup> Graham R. Crampton, "Economic Development Impacts of Urban Rail Transport," Reading University, Paper prepared for the ERS2003 Conference, Finland, August 2003.

<sup>221</sup> Glen D Bottoms, "Continuing Developments in Light Rail Transit in Western Europe: United Kingdom, France, Spain, Portugal, and Italy," Federal Transit Administration, 2000.

<sup>222</sup> Transit Rider Website; [www.transit-rider.com](http://www.transit-rider.com).

Gelsenkirchen, Bonn, Essen, Frankfurt/Main, Mannheim-Heidelberg, Karlsruhe, Saarbrücken, and Stuttgart.

### **Bochum-Gelsenkirchener**

Bochum-Gelsenkirchen Bogestra operates light rail and buses in the towns of Bochum, Gelsenkirchen, Herne, Hattingen and Witten. Tram operations started in 1894, when Siemens and Halske built the first line between the towns of Herne and Bochum. The network grew quite fast, and later Siemens gave the operation to Bogestra. Bogestra itself took over three smaller tramway companies. By 1939, the network was the fifth largest in Germany. After the war some lines closed and improvements were made to the current 62.5-mile system. In 2004, annual ridership reached 7,330,000 and in 2005, it declined slightly to 7,260,000. As of 2006, the network has planned a 3.38-mile extension on Line 310, which will add 10 new stations.



LRT Vehicle in Bochum  
(Source: Kai Brackschulze)

Well before opening, but after announcement of light rail system improvements, there have been no significant changes in central business district development. During a recent construction phase, the LRT did not trigger much new commercial building, but transit company officials perceived an improvement in business activity. This consisted of an increase in retail and restaurant sales and rents.<sup>223</sup>

### **Bonn**

Bonn, the former capital city of 300,000 residents, has two types of light rail -- the traditional street-running trams (Strassenbahn), and the heavier Stadtbahn, which run on reserved surface right-of-way, or underground as a light-rail U-Bahn. Bonner Stadtwerke, an extension of the large Cologne Stadtbahn system, connects the two cities with two lines, 16 and 18, running along a quite rural route. In Bonn itself, the exclusive routes 63-68 also use the city subway. There are two tunnel sections, a 2-mile subway through central Bonn with 6 stations, and a 0.7-mile subway in Bad Godesberg, a southern suburb of Bonn, with 4 stations.<sup>224</sup>



LRT Vehicle in Bonn  
(Source: Kai Brackschulze)

With the loss of its capital status, Bonn has developed into a major center for information technology and telecommunications. Approximately 600 small and medium sized businesses with about 20,000 employees, work in the information and telecommunications sector. This growth has also had a positive impact on the local real estate market. A nationwide survey conducted in 2006 by Sireo Real Estate concluded that Bonn ranked first in terms of future real estate ventures.<sup>225</sup>

<sup>223</sup> Bochum-Gelsenkirchen Bogestra; [www.bogestra.de](http://www.bogestra.de).

<sup>224</sup> Urban Rail Net; [www.urbanrail.net](http://www.urbanrail.net).

<sup>225</sup> The City of Bonn's Website; [www.bonn.de](http://www.bonn.de).

## **Bremen**

In Bremen, a city of 540,770 residents, the historic light rail system consists of nine lines, with an extension currently under construction. In 2002, annual ridership was 54,600 passengers. Mostly running on its own right-of-way, independent of other traffic, the tramlines all cross the city center, primarily in a west to east direction, with line 6 terminating at the airport in the south. With a route length of 62 miles and 182 tram vehicles, the system carries 57 percent of all public transit passengers in Bremen.

The two most expensive commercial centers -- the Technology Park (university area) and the Airport --are both located at the ends of line 6. The city center is the next most important location for office space. Almost all sites located on a tramline have roughly 50 percent higher land prices than sites with no public transport or only bus access. With direct access to retail considered to be very important, the system runs in the major shopping street of the city center. A plan to relocate it to a parallel street was not put into effect because it would have meant less proximity to the shops. Even edge-of-town shopping centers want a transit connection. In general, however, public transport accessibility in Bremen is viewed as more important for commercial and office uses, than for retail and housing.

## **Essen**



Essen LRT (Source: Oliver Mayer)

Essen, a city of 620,000 residents, was the first Ruhr town to open a tramway in 1893. Fuelled by heavy industry, the town of Essen and its tramway network grew, reaching more than 69 miles in the 1930s. After the war, some lines were closed while others were converted to a standard gauge Stadtbahn. As of 2006, there were 37.25 miles of narrow gauge left while the Stadtbahn had grown to 8.63 miles with three lines. Stadtbahn line U11 runs south of the Hauptbahnhof (main station) in a tunnel with mixed-gauge tracks. Two light rail-lines were converted in the early 1980s to a track for guided

buses (Spurbus). Later tracks for the guided bus were laid in one light rail tunnel while dual-fuel buses ran in the tunnel together with light rail cars. Due to technical problems, dual-fuel buses are no longer permitted in the tunnel and now run only at grade on diesel engines.<sup>226</sup>

With a major headquarter concentration and still significant industrial base; Essen is one of the most economically viable cities in Germany.<sup>227</sup> The LRT system has been a catalyst for real estate development in the downtown area.

## **Frankfurt**

There are 7 light rail lines, or U-Bahns, in Frankfurt, the financial center of Germany and a city of 643,000 residents. Lines U1-U3 run from the southern railroad station to the north on a common route, then split to serve several neighborhoods and suburbs. Line U4 runs

<sup>226</sup> Oliver Mayer, "Light Rail in the Ruhr."

<sup>227</sup> City of Essen Website; [www.essen.de](http://www.essen.de).

from the northeastern part of the city to downtown, the main train station and exhibition center, and then out to the northwest, on a track separated from street traffic. Line U5 is a streetcar line heading from the northeast to the city center. There it serves four of the U4 underground stations. Lines U6 and U7 run mostly on a common route from east to west. In the downtown sections, light rail tracks are underground; in the suburbs, they run on their own right of way at street level.



Frankfurt Light Rail (Source: Bombardier)

Many tourist attractions can be reached via light rail, such as museums, theatres, the Alte Oper (Old Opera House), the Zoo and the Palmengarten.<sup>228</sup> There are several extension projects planned for the future, including proposals to establish a fully-fledged subway system.

## **Freiburg**

With 208,300 residents, the city of Freiburg's light rail system currently consists of three lines (line 1, 5, and 6) with another line under construction (Vauban). Freiburg has addressed environmental concerns by reducing car use and upgrading transit. It has directly considered the social dimensions of transit and integrated public transit planning into other policy plans.<sup>229</sup>

Lines 5 and 6 were built in areas intended for more housing development. By 2003, a fivefold increase in housing had occurred but there remained a lack of shops in the commercial sector. Unlike other cities where city center offices command more rents, offices with direct tram access in an industrial area of Freiburg's periphery have the same rent as offices on the fringe of the city center. However, those with no rail access or very good road access were 15 to 40 percent lower than those with tram access.

## **Hannover**

Hannover, a major northern city with 518,700 residents, has four modern light rail lines constructed over the last quarter century. Running over 72 route miles, the system carries nearly 120 million annual transit trips. All lines traverse the city center, with Line A traveling southwest to east, line B north to southeast, line C northwest to east, and line D west to east via the city center. While constructing the light rail lines, the city intended to

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<sup>228</sup> Frankfurt Transit Website; [www.vgf-ffm.de](http://www.vgf-ffm.de).

<sup>229</sup> European Academy for the Urban Environment; [www.eaue.de](http://www.eaue.de).

establish a demand-oriented public transport system in keeping with the needs of urban development and EXPO 2000.<sup>230</sup>

According to real estate agents, house prices and rents are about 5 percent higher close to light rail stations than further away. Large new housing developments have been built next to light rail stations, with Hannover's largest planned housing area (12,000 units) built at the same time as Line 6. It has more than doubled the number of residents and employees.<sup>231</sup>

## **Karlsruhe**

Karlsruhe is a center for innovation in rail technology for public transport. Dual-mode light rail propulsion, able to operate either with batteries or an overhead supply line, was first developed there in 1989. The Karlsruhe tram is running on an urban light rail system and on heavy rail tracks of the Deutsche Bahn AG. In doing so, the city has pioneered the practice of light and heavy rail integration.<sup>232</sup> The Karlsruhe model of a dual-mode railway system is an outstanding example of best practice in urban development. It represents a continuous extension of an environmentally compatible transport system from a city center to the suburban region, while introducing innovative new technology that facilitates commuter movement between railway and tramway.

Since the city's light rail service began in 1992, ridership has increased by more than 400 percent. Urban life in the city center has been revitalized, particularly in heavier pedestrian precincts.

## **Saarbrücken**

The Stadtbahn Saar GmbH, or transit authority of Saarbrücken, a city of 182,000 residents, operates a light rail network with a route length of 29 miles. First opened in 1997, the main line runs roughly in a north-south direction. Due to a recent extension of the network, another 13 vehicles were added to the fleet of 22 in 2000. These vehicles run on completely new routes through the center of the city, and on a DC 750 V line. Outside of the city, in suburban or regional traffic, the vehicles change to existing railway lines of the DB AG (Deutsche Bahn AG).<sup>233</sup>

There was a drastic decline in retailing turnover in Saarbrücken during the time period when the light rail system was being built. However, those trends changed when the line opened. The downward trend in the town center, especially along the main shopping street, stopped as a result of the LRT service and because of increased pedestrianization. Since then, there have been no perceived negative effects on retailing. Although the light rail does not run through the main shopping center, it appears to have had a positive impact on shops. However, data of the federal retailing organization shows no increase in the number of shoppers accessing the city center by public transit.<sup>234</sup>

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<sup>230</sup> European Academy for the Urban Environment; [www.eaue.de](http://www.eaue.de).

<sup>231</sup> Carmen Hass-Klau, Graham Crampton and Rabia Benjari, "Economic Impact of Light Rail," Bergische Universität Wuppertal, 2005.

<sup>232</sup> University of the West of England, Prosper Congress, Karlsruhe, September 2001.

<sup>233</sup> Electrical Equipment for 2-System Light Rail Vehicle of the Stadtbahn Saar (Transit Authority), Düsseldorf (Germany), Postfach 13 05 40.

<sup>234</sup> Carmen Hass-Klau, Graham Crampton and Rabia Benjari, "Economic Impact of Light Rail," Bergische Universität Wuppertal, 2005.

## 5.0 Projected Economic and Fiscal Impacts of vision42

### 5.1 Direct Economic Benefits

The introduction of light rail services in a pedestrianized 42<sup>nd</sup> Street will have permanent economic benefits to the retail shops and hotels located on 42<sup>nd</sup> Street, and to the many cinemas and legitimate theaters concentrated in the 37<sup>th</sup> to 47<sup>th</sup> Streets corridor. In addition, property owners, business employees, and the public treasury will benefit. The direct and measurable benefits are:

- Increased pedestrian traffic, including tourist attraction, resulting in more retail customers, hotel guests, and theater attendees.
- Increased retail sales, hotel room occupancy, and theater ticket sales.
- Increased employment and earnings from business expansion.
- Increased rents in commercial buildings
- Increased state and local taxes

Numerous other, non-quantifiable benefits will accrue to owners of development sites, occupants of existing buildings, and the public in general. While not measurable in this report, note should be made of potential improvements from LRT service to air quality in the corridor, soft site assemblages, possible transfers of development rights, employee performance, general health and travel service improvements for the disabled. A prior report identified and measured the direct economic benefits from travel time savings, property value increases, rent and occupancy increases for office properties, reductions in vehicular and pedestrian accidents, and operational savings of the LRT system over the existing bus service.

Measurement of the following benefits is based upon survey responses of the retail shops, hotels and theaters described in Chapter 3.0 of this report.

#### 5.1.1 Benefits of Increased Pedestrian Traffic on Retail Customers on 42<sup>nd</sup> Street

The aggregate increase in pedestrian traffic, described in Chapter 2.0, will result in increased customer traffic in the retail shops and restaurants on 42<sup>nd</sup> Street. 54 Survey respondents indicated an average level of customers per day which, compared to street segment and type of establishments, yielded an average daily customer traffic of 16,750 for the universe of retail and restaurant establishments on 42<sup>nd</sup> Street. Assuming a proportional relationship between street and customer foot traffic, the number of retail and restaurant customers will increase from 39,000 at present (under no build conditions) to over 57,000 per day (under build conditions), without an increase in occupancy of vacant stores upon opening of LRT service. Table 5.1 shows these results on an average per store basis by street segment.

**Table 5.1. Increase in Customer Traffic for Retail Shops and Restaurants on 42<sup>nd</sup> Street with LRT Service**

Street Segment	Average Midday/Evening 42 <sup>nd</sup> Street Pedestrians per Hour		Average Daily Retail/Restaurant Customers	
	No Build	Build	No Build	Build
1-2nd Ave	3,524	7,482	175	372
2-3rd Ave	7,533	9,692	338	434
3-Lexington Ave	9,863	11,957	600	727
Lexington-Madison Ave	10,517	12,636	238	285
Madison to 5th Ave	7,594	9,636	383	486
5-6th Ave	6,026	8,056	384	513
6-7th Ave	7,270	9,302	600	768
7-8th Ave	5,731	7,754	418	565
8-9th Ave	3,858	6,092	163	257
9-10th Ave	2,542	4,780	185	348
10-11th Ave	3,227	5,468	195	330
11-12th Ave	2,816	5,061	375	674
TOTAL			310	453

Source: Urbanomics

**5.1.2 Benefits of Increased Pedestrian Traffic, Including Tourist Attraction, on Hotel Occupancy on 42<sup>nd</sup> Street**

Five (5) survey respondent hotels expect pedestrian traffic to increase 3.7 percent on average from tourism and 3.5 percent from local residents, workers and shoppers. When asked whether more pedestrians would affect their hotel business, they responded with a 2.0 percent likely business gain and a comparable positive impact on patronage of hotel restaurants. Assuming this rate of increase reflects greater occupancy of all hotels on 42<sup>nd</sup> Street, benefits will occur to both room and restaurant sales. It should be noted that the largest hotel respondent reported current operations at or near a cap, which limits the potential for its expansion and suggests the demand for more supply. As Table 5.2 shows, based conservatively on only anticipated business gains, the average daily occupancy of all seven (7) hotels on 42<sup>nd</sup> Street is expected to increase from 6,093 to 6,212 daily guests under build conditions.

**Table 5.2. Increase in Hotel Occupancy on 42<sup>nd</sup> Street with LRT Service**

Universe of Hotels	Anticipated Increase in Tourists	Anticipated Impact on Hotel Business	Average Daily Hotel Occupants	
			No Build	Build
5 Survey Respondents	3.7%	2.0%	3,548	3,617
2 Other 42 <sup>nd</sup> St Hotels	n/a	n/a	2,546	2,595
TOTAL			6,093	6,212

Source: Urbanomics

**5.1.3 Benefits of Increased Pedestrian Traffic, Including Tourist Attraction, on Theater Attendance in the 37<sup>th</sup> to 47<sup>th</sup> Streets Corridor**

Six (6) theaters on 42<sup>nd</sup> Street, including two (2) cinemas, and five (5) theaters in the 37<sup>th</sup> to 47<sup>th</sup> Streets corridor that responded to the survey collectively house over 20,000 seats. The two cinemas report annual ticket sales of nearly 3.5 million, while the nine legitimate theaters report annual theater attendance of roughly 2.5 million. Collectively, the eleven theaters predict a five (5) percent increase in tourism and a 2.5 percent increase in local traffic as a consequence of LRT service, but a majority does not anticipate the rise in foot traffic will translate into increased ticket sales. On average, weighted by the number of theater seats, a 3.6 percent increase in theater business is anticipated on 42<sup>nd</sup> Street, compared to only a 1.2 percent increase in the larger corridor. This translates into 5.8 million theater-goers annually on 42<sup>nd</sup> Street and 7.4 million elsewhere in the 37<sup>th</sup> to 47<sup>th</sup> Streets corridor. Table 5.3 provides an estimate for all 65 theaters in the 37<sup>th</sup> to 47<sup>th</sup> Streets corridor.

**Table 5.3. Increase in Theater Attendance in 37<sup>th</sup>-47<sup>th</sup> Streets Corridor with LRT Service**

Universe of Theaters	Anticipated Increase in Tourists	Anticipated Impact on Theater Business	Average Annual Ticket Sales	
			No Build	Build
<b>On 42<sup>nd</sup> Street:</b>				
2 Cinemas	2.5%	3.6%	3,450,000	3,573,000
15 Legitimate Theaters	4.4%	3.5%	2,110,000	2,177,000
<b>In 37<sup>th</sup> to 47<sup>th</sup> St Corridor:</b>				
50 Legitimate Theaters	4.5%	1.2%	7,300,000	7,409,000
TOTAL			12,860,000	13,159,000

Source: Urbanomics

**5.1.4 Benefits of Increased Retail Customers on Retail Sales on 42<sup>nd</sup> Street**

Assuming the increase in pedestrian traffic by street segment is reflected in customer foot traffic and the number of customers increases from 39,000 per day at present to over 57,000 per day under build conditions, the volume of retail and restaurant sales is likely to increase proportionately, based upon average store sales per customer and location. Table 5.4 shows, average daily customer expenditures are projected to increase from \$3.2 million to \$4.3 million, or by 35 percent, assuming no increase in occupied stores or

the price points of goods and services for sale. On an annual basis, this increase would translate into a \$380 million rise in sales as annual receipts of \$1.088 billion expand to \$1.468 billion with pedestrianization and the operation of LRT services.

**Table 5.4. Increase in Average Daily and Annual Sales of Retail Shops and Restaurants on 42<sup>nd</sup> Street with LRT Service**

Street Segment	Average Daily Retail/ Restaurant Customers		Average Daily Retail/ Restaurant Customer Sales	
	No Build	Build	No Build	Build
1-2nd Ave	175	372	\$65,625	\$139,323
2-3rd Ave	338	434	\$92,813	\$119,402
3-Lexington Ave	600	727	\$105,000	\$127,290
Lexington-Madison Ave	238	285	\$820,776	\$986,189
Madison to 5th Ave	383	486	\$86,250	\$109,440
5-6th Ave	384	513	\$1,008,239	\$1,347,872
6-7th Ave	600	768	\$15,000	\$19,192
7-8th Ave	418	565	\$730,516	\$988,437
8-9th Ave	163	257	\$69,896	\$110,357
9-10th Ave	185	348	\$85,212	\$160,226
10-11th Ave	195	330	\$129,675	\$219,741
11-12th Ave	375	674	\$9,375	\$16,849
TOTAL	310	453	\$3,218,376	\$4,344,318
	Annual Retail/ Restaurant Customers in 000,000		Average Annual Retail/Restaurant Customer Sales in \$000,000	
	No Build	Build	No Build	Build
TOTAL	13.2	19.3	\$1,087.8	\$1,468.4

Source: Urbanomics

Note: Assumes no increase in retail establishments or price points of goods and services for sale.

### 5.1.5 Benefits of Increased Hotel Occupancy on Room Sales on 42<sup>nd</sup> Street

Given the hoteliers' anticipation of pedestrian traffic and tourism impacts on 42<sup>nd</sup> Street hotel occupancy, the positive financial benefit to the seven hotels is likely to be minimal without an increase in the number of hotel rooms and the price of an over-night stay. As Table 5.5 shows on an annual basis, the number of guest is expected to increase from 1.87 million to 1.91 million and the annual room sales from \$323.7 million to \$329.4 million, will full operation of LRT services. However, the survey responses and the statistical occupancy data suggest that 42<sup>nd</sup> Street hotels are much in demand and near full occupancy. Essentially, the level of their benefits is constrained by their lack of capacity.

Substantially increased pedestrian traffic and the LRT's expected tourism draw are natural attractions for additional hotel rooms on 42<sup>nd</sup> Street. If built, one could expect a consequent increase in the financial value of hotel occupancy.

**Table 5.5. Increase in Annual Hotel Room Sales on 42<sup>nd</sup> Street**

Universe of Hotels	Average Annual Hotel Occupants		Value of Annual Hotel Room Sales in \$millions	
	No Build	Build	No Build	Build
5 Survey Respondents	1,295,000	1,320,000	\$199.0	\$202.2
2 Other 42 <sup>nd</sup> St Hotels	575,000	587,000	\$124.7	\$127.2
TOTAL	1,870,000	1,907,000	\$323.7	\$329.4

Source: Urbanomics

**5.1.6 Benefits of Increased Theater Attendance on Ticket Sales in 37<sup>th</sup>-47<sup>th</sup> Streets Corridor**

Ticket sales of the 2 cinemas and 15 legitimate theaters on 42<sup>nd</sup> Street amount to nearly \$200 million annually under existing conditions, while the larger theater district outside of 42<sup>nd</sup> Street adds another \$560 million in annual ticket sales for an aggregate value of \$758 million. Given the increases anticipated in ticket sales with full pedestrianization and operation of LRT services, the cinemas and legitimate theaters on 42<sup>nd</sup> Street foresee a 3 percent rise in business to \$204 million annually, without an increase in ticket prices. The larger district with 50 legitimate theaters will not experience as significant an increase in theater attendance from improved accessibility, and is expected to capture a smaller increase (1.5%) in ticket sales or reap some \$8 million more annually. Collectively, the annual ticket revenue of the 67 theaters is projected to rise from \$758 million under existing conditions to \$772.3 million annually upon opening of the LRT services, without an increase in ticket prices.

**Table 5.6. Increase in Annual Theater Ticket Sales in 37<sup>th</sup>-47<sup>th</sup> Streets Corridor with LRT Service**

Universe of Theaters	Average Annual Ticket Sales		Value of Annual Ticket Sales in \$millions	
	No Build	Build	No Build	Build
<b>On 42<sup>nd</sup> Street:</b>				
2 Cinemas	3,450,000	3,573,000	\$35.6	\$36.9
15 Legitimate Theaters	2,110,000	2,177,000	\$162.1	\$167.0
<b>In 37<sup>th</sup> to 47<sup>th</sup> St Corridor:</b>				
50 Legitimate Theaters	7,300,000	7,409,000	\$560.3	\$568.4
TOTAL	12,860,000	13,159,000	\$758.0	\$772.3

Source: Urbanomics

**5.1.7 Benefits of Retail Business Expansion on Worker Employment and Earnings**

An increase in retail and restaurant business will likely require additional workers to serve the expanded customer base and a growth in annual payrolls. Based upon reported levels of employment and average rates of pay by business type, correlated with the

increase in business sales, the employment of retail shops and restaurants on 42<sup>nd</sup> Street is expected to increase from 3,113 at present to 4,182 under future build conditions, or by 34 percent. Aggregate annual worker earnings will reflect the rise in employment by increasing from \$76.5 million under no build conditions to \$102.7 million when business expands with pedestrianization and the opening of LRT service

**Table 5.7. Increase in Annual Employment and Worker Earnings of Retail Shops and Restaurants on 42<sup>nd</sup> Street with LRT Service**

Street Segment	Average Retail/ Restaurant Employment		Average Retail/ Restaurant Wages and Salaries in \$000	
	No Build	Build	No Build	Build
1-2nd Ave	8	17	\$184.4	\$391.5
2-3rd Ave	140	179	\$3,205.4	\$4,123.7
3-Lexington Ave	880	1,067	\$23,004.9	\$27,888.5
Lexington-Madison Ave	431	518	\$10,781.5	\$12,954.3
Madison to 5th Ave	114	145	\$2,610.1	\$3,311.9
5-6 <sup>th</sup> Ave	353	472	\$9,086.8	\$12,147.8
6-7 <sup>th</sup> Ave	56	72	\$1,457.6	\$1,865.0
7-8 <sup>th</sup> Ave	697	943	\$16,162.4	\$21,868.8
8-9 <sup>th</sup> Ave	81	127	\$1,798.6	\$2,839.8
9-10th Ave	221	415	\$4,941.9	\$9,292.4
10-11th Ave	115	195	\$2,791.3	\$4,730.1
11-12th Ave	18	32	\$448.8	\$806.6
TOTAL	3,113	4,182	\$76,473.8	\$102,737.7

Source: Urbanomics

### **5.1.8 Benefits of Rents and Occupancy Increases on 42<sup>nd</sup> Street Commercial Space**

As retail and restaurant business increases on 42<sup>nd</sup> Street with increased customer traffic, pedestrianization and LRT service, the rental value of retail properties can be expected to reflect the enhanced sales profile of stores in new lease agreements. The experience of LRT cities chronicled in Chapter 4 suggests that store turnover will take place to some degree as property rents increase. Higher priced merchandise will be introduced and store types may change to reflect more consumer service and the demand for quality goods. Without an understanding of existing leases, but with a generalized knowledge of store rents from survey and broker information, as well as new store lease asking rents, an estimate has been made of the eventual rent levels under build conditions with the assumption of no increase in occupied stores and full occupancy of all commercial storefronts, including existing vacancies. Future rental values are shown in constant 2005 dollars.

As Table 5.8 shows, aggregate store rents are expected to increase from \$95.2 million at current occupancy levels and sales volumes to \$136.3 million under future build conditions, assuming no increase in the number of retail shops and restaurants. Should the 22 vacant storefronts become occupied, given their physical dimensions and street location, it is estimated that aggregate annual commercial rents would increase to \$149.2 million.

**Table 5.8. Economic Benefits of Retail and Restaurant Rent and Occupancy Increases**

Beneficiary	Aggregate Annual Rents in \$000,000		
	No Build	Build	
		Existing Shops & Restaurants	With Vacant Stores Occupied
Commercial Properties	\$95.2	\$136.3	\$149.2

Source: Urbanomics

## 5.2 Direct Economic Costs

The introduction of light rail services to a pedestrianized 42<sup>nd</sup> Street will have two permanent economic disbenefits and two temporary costs that are directly measurable. The permanent and temporary impacts are:

- Permanent relocation of truck parking off 42<sup>nd</sup> Street, resulting in increased time and costs of freight delivery
- Permanent relocation of passenger pick-up and delivery off 42<sup>nd</sup> Street, resulting in increased time and some reduction in demand for hotel or theater attendance
- Temporary disruption to business sales during the short term construction phase
- Temporary disruption to business employment during the short term construction phase

### 5.2.1 Retail Sales Lost During Construction

Retail and restaurant owners and managers expected sales losses during the six month period of LRT construction on a street segment basis. Although sidewalks will be open and bus service available, they reported expected losses ranging from under 10 to 25 percent or more over the period due to the disruption. The average estimate of loss at 22 percent of daily store sales would represent a one-time \$119.7 million aggregate sales loss for all stores across 42<sup>nd</sup> Street, or an 11 percent decline in annual sales expectation.

**Table 5.9. Economic Costs of Retail and Restaurant Sales Losses During LRT Construction**

Universe of Stores	One Time Sales Loss in \$000,000		
	No Build – Average Daily Sales	Construction Period – 6 Months Duration	
		% Loss in Business	Estimated Period Loss
Retail Shops & Restaurants	\$3,218,376	-22%	\$119.7

Source: Urbanomics

**5.2.2 Retail Employment Decline During Construction**

Should retailers and restaurateurs cut back employment levels with a reduction in business, proportional to their loss in sales, then some 685 jobs will be eliminated during the six month period by street segment. This will result in the loss of \$8.4 million in worker earnings across 42<sup>nd</sup> Street, over the entire period of LRT construction.

**Table 5.10. Economic Costs of Retail and Restaurant Employment and Earnings Losses During LRT Construction**

Universe of Stores	One Time Employment & Earnings Loss		
	No Build – Average Daily Employment	Construction Period – 6 Months Duration	
		Employment Loss	Period Earnings Loss in \$000,000
Retail Shops & Restaurants	3,113	685	\$8.4

Source: Urbanomics

**5.2.3 Increased Cost of Deliveries**

As a consequence of the closure of 42<sup>nd</sup> Street to auto and truck traffic, approximately 150 hand freight entrances will experience average delivery time increases of 3:44 minutes per an average of 4 daily deliveries. Assuming the average hourly wage of a local trucker, Table 5.11 shows that the anticipated cost of increased delivery time will be \$253,300 annually.

**Table 5.11. Economic Costs of Increased Delivery Time**

Average Weekday	# 42 <sup>nd</sup> St Entrances	# Deliveries per Entrance	Average Increase in Delivery Time (min)	Average Hourly Trucker Wage	Annual Delivery Cost Increase
Inbound	150	4	3:44	\$13.57	\$126,650
Outbound	150	4	3:44	\$13.57	\$126,650
Total	150	4	3:44	\$13.57	\$253,300

Source: Urbanomics and Sam Schwartz LLC

### 5.3 Direct Fiscal Benefits

The direct economic benefits of LRT access and a pedestrianized street that will accrue to retail shops, restaurants, hotels and theaters will have a fiscal impact on New York City and New York State tax revenues. Fiscal impacts on public revenues are monetized based on the relationship between tax bases, rates and bounds.

#### 5.3.1. Increases in New York City and New York State Tax Revenues

Five tax revenue sources of New York City and New York State are expected to generate \$28.4 million annually from the monetized benefits of LRT service on a pedestrian 42<sup>nd</sup> Street to the retail, restaurant, hotel and theater businesses. Tax revenues accruing to New York City would be \$17 million and to New York State, \$11.4 million. A one-time tax loss of \$5.3 million will result from the impact of construction on business sales. By quantifiable tax source, Table 5.12 depicts the annual fiscal benefit.

**Table 5.12. Fiscal Benefits of Selected Revenue Sources**

<b>Beneficiary</b>	<b>Tax Basis</b>	<b>Tax Source &amp; Rate</b>	<b>Revenue in \$millions</b>
New York City	Increased Property Value from Rent Increases	Property Tax @ 11.3% of Assessment	\$5.4 annual gain
New York City and New York State	Increased Employment	Personal Income Tax on NYC Residents @ 7.6% combined	\$1.6 annual gain \$0.5 one-time loss
New York City and New York State	Increased Retail Sales	Sales Tax @ 4% NYC & 4% NYS	\$15.2 annual gain \$4.8 one-time loss
New York City and New York State	Increased Business and Rental Income	General Corporation Tax	\$5.9 annual gain
New York City	Increased Hotel Occupancy	Hotel Occupancy Tax Increase @ \$2/day + 5% of rent	\$0.3 annual gain

Source: Urbanomics

Increased property tax revenues will flow from increased property value of commercial structures with ground floor retail shops and restaurants that receive a rent increase or are newly occupied (formerly vacant) stores. Assessed at 45 percent (45%) of market value and currently taxed at 11.306 percent of assessment, the increase in commercial property value from rent increases would generate \$5.4 million in annual property taxes if no exemptions pertain.

Retail and restaurant employment increases that are directly attributable to the benefit of increased customer traffic will generate a \$26.3 million increase in worker earnings during the first full year of LRT operations. Assuming 73 percent of new earnings accrue to New York City residents (\$19.2 million) and 85 percent to New York State residents (\$22.3 million)<sup>1</sup>, at average tax rates<sup>2</sup> the revenue yield on personal income earned in newly

<sup>1</sup> Based on 2000 Census Transportation Planning Package (CTPP) reported shares of New York City and New York State residents working in Manhattan of total Manhattan workers.

<sup>2</sup> Tax filing status as single, married filing joint return, and head of household affects the tax rate, standard deduction and number of dependents. For simplicity sake, it was assumed that tax filing status divided into thirds and single filers had no dependents, married filing joint return had one dependent, and head of

leased space would be \$0.5 million for New York City and \$1.1 million for New York State, for a combined annual impact of \$1.6 million. During the period of construction, an estimated \$8.4 million of worker earnings are assumed to be lost due to the lay-off of retail and restaurant workers. This earnings loss would translate into a one-time \$0.5 million loss in personal income tax to New York City and New York State, should these workers not be relocated elsewhere. It should also be noted, that an unknown portion of newly hired workers may represent jobholders that were relocated from other worksites in New York City and State.

With an increased customer base, retail shop and restaurant sales are anticipated to increase by \$380 million annually. Conservatively assuming half are taxable, which reflects the year-round exemption on clothing and footwear purchases under \$110, the combined 4 percent New York City and 4 percent New York State sales tax rate would generate \$15.2 million in sales tax revenues annually, upon opening of LRT service. Tax yields could increase with an expansion of retail shops and restaurants into the 22 vacant stores, or with an increase in the price points of goods and services offered for sale in the existing establishments. During the construction phase, when nearly \$120 million of sales may be lost due to disruption of the streetscape, it is estimated that one-time sales tax losses would amount to \$4.8 million.

New York City and New York State impose a corporate franchise tax on earned income for the privilege of doing business, employing capital, owning or leasing property, or maintaining a commercial establishment in New York City. The tax is primarily based on the federal taxable income concept of "entire net income" with certain inclusions, exclusions, and adjustments. Given the lack of financial data on commercial, hotel and theater businesses and properties, a conservative assumption of eight percent (8%) is adopted, or a \$36.4 million increase in net income of retail shops, restaurants, hotels, theaters and rental properties, against which the City and State corporation tax rates are applied. The New York City corporation tax rate of 8.85 percent (8.85%) would yield \$3.2 million, while the corresponding New York State tax rate of 7.5 percent (7.5%) would yield \$2.7 million, for a combined \$5.9 million of corporate franchise tax revenue.<sup>3</sup> During the construction phase, which is expected to result in sales losses, a one-time reduction in net income may reduce corporate tax liability by \$1.6 million for retail shops and restaurants.

In New York City, a hotel occupancy tax is imposed on room rentals at the rate of \$2 per day and 5 percent of the hotel room rate. The expected annual increase of 37,000 guests at existing room rates will yield nearly a \$350,000 increase in hotel occupancy tax revenues.

#### **5.4. Cost-Benefit Relationship**

Upon full operation of the LRT system, the annual value of direct net benefits accruing to retail shops, restaurants, hotels, theaters and state and local government is estimated to be \$483 million. This compares to an expected loss of \$125 million consisting of the prior year's temporary sales loss and the annual delivery cost increases. The resulting positive net benefit amounts to \$358 million in year one of operations. Thereafter, in subsequent years, the positive net benefit would be higher, reflecting the absence of a construction

---

households had two dependents, yielding an average 2.8 percent (2.8%) of wages as taxable in New York City and 4.8 percent (4.8%) as taxable in New York State.

<sup>3</sup> Some retail shops and restaurants may be unincorporated, requiring them to pay the New York City unincorporated business tax, rather than the corporate franchise tax. In addition, some theaters may be non-profit entities which would also reduce the aggregate tax liability.

phase impact. In conclusion, the positive net benefits of an LRT system in a pedestrianized 42<sup>nd</sup> Street will generate increased revenues for business and government from the retail and entertainment sector of New York City's economy. These net benefits supplement those economic and fiscal effects estimated previously, based upon the positive returns to travelers, residents and office workers in the 42<sup>nd</sup> Street corridor.

**Table 5.13. Comparison of Annual Direct Net Benefits to Annual Costs for Retail Shops, Restaurants, Hotels and Theaters in Year 1 of Operations**

<b>Annual Cost-Benefit Component</b>	<b>Value of Direct Benefits</b>	<b>Value of Direct Costs</b>	<b>Net Benefit</b>
<b><i>Economic Benefit:</i></b>			
Sales	+\$400.6 million		
Rents	+\$54.0 million		
<b><i>Fiscal Benefit:</i></b>			
New York City tax revenue increase	+17.0 million		
New York State tax revenue increase	+11.4 million		
<b><i>Less:</i></b>			
<b><i>Economic &amp; Fiscal Costs:</i></b>			
Temporary one-time sales loss		-\$119.7 million	
Increased cost of deliveries		-\$0.3 million	
One time tax loss		-\$5.3 million	
<b><i>Equals:</i></b>			
<b><i>Net Economic &amp; Fiscal Benefit</i></b>	<b>+\$483 million</b>	<b>-\$125 million</b>	<b>+\$358 million</b>

Source: Urbanomics

**Appendix A**  
**Retail Survey**

**www.vision42.org**

Roxanne Warren, AIA, Chair

George Haikalas, ASCE, Co-Chair

1841 Broadway

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**advisory committee:**

Jean Claude Baker

*Owner,*

*Chez Josephine*

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*Bryant Park Restoration*

Jonathan Bowles

*Research Director,*

*Center for an Urban Future*

Carter Craft

*Metropolitan Waterfront Alliance*

Janine DiGiacchino

*General Manager, NYC*

*Madame Tussaud's Wax Museum*

Douglas Durst

*Co-President,*

*The Durst Organization*

Alfred Fazio

*Former President & CEO,*

*21st Century Rail Corporation*

**Thank you for participating in an important survey of possible improvements to transit services and the walking environment on 42nd Street. A modern, low-floor light rail line (LRT) has been proposed by the Institute for Rational Urban Mobility, Inc., for surface operation, river-to-river, in a landscaped, auto-free street-- vision42. As one of some 150 retailers on 42nd Street, your evaluation of this proposal is of vital importance to the success of its consideration. Please take a moment to review this survey on your own. Our researchers will telephone you shortly to arrange for a convenient time for them to interview you. Your response will be kept strictly confidential.**

**Please tell us something about your store:**

Store Name & Address:

42nd Street

Survey Respondent Name & Title:

--

\_\_ owner \_\_ manager \_\_ other (please specify) \_\_\_\_\_

How many employees do you have at this location?

--

In general terms, how many shoppers enter your store on an average day?

< 50		50-100		100-250		250-500		500+	
------	--	--------	--	---------	--	---------	--	------	--

\* Ranking them 1 to 4 by frequency (1 *most frequent*), would you say they are:

Office workers		Local residents		Shoppers		Tourists	
----------------	--	-----------------	--	----------	--	----------	--

\* What is the typical shopper expenditure per visit?

< \$50		\$50-\$100		\$100-\$250		\$250-\$500		\$500+	
--------	--	------------	--	-------------	--	-------------	--	--------	--

Do you experience a drop-off in business on weekends or during evening hours?

yes		no		If yes, by what percent?	
-----	--	----	--	--------------------------	--

Do you lease or own this property and how many years have you been at this address?

lease		own		years at current address	
-------	--	-----	--	--------------------------	--

\* If you lease space, what is your annual rent per square foot?

< \$100		\$100-\$150		\$150-\$250		\$250-\$400		\$400+	
---------	--	-------------	--	-------------	--	-------------	--	--------	--

Jessica Flagg

Director,  
New York Climate Rescue

Tom Fox  
President & CEO,  
New York Water Taxi

Alexander Garvin  
Principal,  
Alex Garvin & Associates

Jeff Gural  
Chairman & CEO,  
Newmark & Co. Real Estate, Inc.

Ashok Gupta  
Senior Energy Economist,  
Natural Resources Defense Council

Tony Hiss  
Urbanist, Author

Arthur Imperatore, Jr.  
President  
New York Waterway

Georges Jacquesmart, PE, AICP  
Partner,  
BFJ Planning

John Johnston  
Former President & CEO,  
21st Century Rail Corporation

Fred Kent  
President,  
Project for Public Spaces, Inc.

Charles Komanoff  
Principal,  
Komanoff Energy Associates

Floyd Lapp, PhD, FAICP

Pamela Lippe  
Executive Director,

What, if any, concerns do you have regarding your current business location?

litter/graffiti/vandalism	<input type="text"/>	quality of street/sidewalk	<input type="text"/>
shoplifting/more serious crime	<input type="text"/>	street traffic & noise	<input type="text"/>
upkeep of adjacent properties	<input type="text"/>	condition of building or façade	<input type="text"/>
parking	<input type="text"/>	sidewalk vendors	<input type="text"/>
other (please specify)	<input type="text"/>		

**Please give us your thoughts regarding the proposed light rail transit (LRT) service:**

On a score of 1 to 5 (5 highest), how would you rate having LRT service on 42nd Street:

\* Pedestrian space would be expanded, providing room for outdoor cafes and advertising. If the LRT service brings more pedestrians to 42nd Street, how would this impact your business?

shoppers likely to increase	<input type="text"/>	shoppers likely to decrease	<input type="text"/>
no effect	<input type="text"/>	don't know	<input type="text"/>

*Restaurant only:* If permitted, would you consider expanding your business onto sidewalk space?

yes	<input type="text"/>	no	<input type="text"/>	don't know	<input type="text"/>
-----	----------------------	----	----------------------	------------	----------------------

\* With **vision42** there would be no truck traffic on 42nd Street during the day or evening. For businesses lacking freight entrances on 42nd or 43rd Street, extra delivery parking space would be reserved on the nearest avenues (see diagram).

How many deliveries on 42nd St do you currently get per day?

What time(s) are these deliveries made?

Where does the truck park?

Would relocating truck delivery parking hurt your business?

yes	<input type="text"/>	no	<input type="text"/>	don't know	<input type="text"/>
-----	----------------------	----	----------------------	------------	----------------------

\* Construction of the LRT system, river to river, would take at least 21 months. During that time, buses would run river to river; sidewalks and crosswalks would NOT be closed; and water and power would NOT be interrupted (see diagrams). Active construction on each block would take 5-6 months to relocate utilities, lay track, and landscape. Would a 5-6 month construction period impact your business?

yes	<input type="text"/>	no	<input type="text"/>	don't know	<input type="text"/>
If yes, by how much?	<5% <input type="text"/>	5-10% <input type="text"/>	>10% <input type="text"/>		

Earth Day New York  
Rocco Landesman  
President,

\* Commercial trash would be collected at night from receptacles located at 50' intervals on the widened sidewalk. Would carrying trash further than your curbside impact your business?  
yes  no  don't know

Jujamcyn Theaters  
Russell Menkes  
General Manager,  
Hilton Times Square Hotel

\* LRT service would be operational river-to-river within 2 years of construction start. In other U.S. cities, LRT service has increased downtown activity. Do you think a 42nd Street LRT would increase your business?  
yes  no  don't know

Howard Milstein  
Chairman,  
Milstein Brothers Capital Partners

\* If you think there would be a negative **short term** effect on your business, what do you think would cause it?  
(please rank any item from 1 to 5, or least to most negative)

Maura Moynihan  
Senior Fellow,  
Regional Plan Association

disruption for customers during construction   
elimination of car or taxi access to store   
limited access for deliveries or trash collection   
construction-related environmental conditions (dust, noise)   
other (please specify) \_\_\_\_\_

Dick Netzer, PhD  
Professor,  
NYU Wagner School

\* If you think there would be a positive **long term** effect on your business, what do you think would cause it?  
(please rank any item from 1 to 5 or least to most positive)

Louis J. Riccio, PhD, PE,  
Former Commissioner,  
NYC Department of Transportation

more pedestrian traffic   
wider sidewalk space   
better transit access to store   
closeness to LRT stops   
lack of traffic congestion   
landscaping, benches and other streetscaping amenities   
other (please specify) \_\_\_\_\_

Elliot Sander  
Senior Vice President  
DMJM + Harris, Inc.

--or--  
no positive long term effect (check if applicable)

Mildred F. Schmetz, FAIA  
Sam Schwartz, PE  
Professor,  
Cooper Union

\* What streetscape amenities, promotional or other efforts would you propose for a new 42nd Street?  
(please specify) \_\_\_\_\_

Michael Sorkin  
Director,  
Urban Design Program,  
City College of New York

\* If the LRT takes longer to build, would your opinions on the impacts to your business change?  
yes no don't know  
If yes, how? \_\_\_\_\_

Vukan R. Vuchic, PhD  
Professor,  
University of Pennsylvania  
Department of Transportation  
Paul Steely White  
Executive Director,  
Transportation Alternatives

**Thank you for your participation. This proposal currently does not receive city approval. Collectively, your response, and that of your retail neighbors, will assist in its evaluation.**

## **Appendix B**

### **Hotel and Theatre Questionnaire**



[www.vision42.org](http://www.vision42.org)

Roxanne Warren, AIA, Chair

George Haikalis, ASCE, Co-Chair

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#### advisory committee:

Jean Claude Baker

*Owner,  
Chez Josephine*

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*Metropolitan Waterfront Alliance*

Janine DiGiacchino

*General Manager, NYC  
Madame Tussaud's Wax Museum*

Douglas Durst

*Co-President, The Durst Organization*

Thank you for participating in an important survey of possible improvements to transit services and the walking environment on 42nd Street. A modern, low-floor light rail line (LRT) has been proposed by the Institute for Rational Urban Mobility, Inc., for surface operation, river-to-river, in a landscaped, auto-free street--vision42. As one of a number of hotel and theater managers selected for the survey in the 42nd Street area, your evaluation of this proposal is of vital importance. This interview requires about one-half hour. Your response will be kept strictly confidential.

#### Please tell us something about your hotel or theater:

Hotel/Theater Name & Address:

Survey Respondent Name & Title:

owner  manager  other (please specify) \_\_\_\_\_

1. How many employees do you have at this location?

2. What is the number of annual hotel guests or theater attendees in the most recent year available?

 Please indicate year: 

3. What percentage are local (NYC), other regional (Metro area), other U.S., and international:

NYC  other metro  other U.S.  international

4. What is the average cost of a hotel room or theater ticket?

5. What months are your high and low seasons? (for use in considering best time for construction in area)

High  Low

6. For hotels only - is there a restaurant in the hotel?

yes  no

Alfred Fazio  
*Former President & CEO,  
 21st Century Rail Corporation*

Jessica Flagg  
*Director,  
 New York Climate Rescue*

Tom Fox  
*President & CEO,  
 New York Water Taxi*

Alexander Garvin  
*Principal,  
 Alex Garvin & Associates*

Jeff Gural  
*Chairman & CEO,  
 Newmark & Co. Real Estate, Inc.*

Ashok Gupta  
*Senior Energy Economist,  
 Natural Resources Defense Council*

Tony Hiss  
*Urbanist, Author*

Arthur Imperatore, Jr.  
*President  
 New York Waterway*

Georges Jacquesmart, PE, AICP  
*Partner,  
 BFJ Planning*

John Johnston  
*Former President & CEO,  
 21st Century Rail Corporation*

Fred Kent  
*President,  
 Project for Public Spaces, Inc.*

Charles Komanoff

7. What, if any, concerns do you have regarding your current business location? Score 1-5 (5 = highest, and 1 = no concern)

litter/graffiti/vandalism	<input type="text"/>	quality of street/sidewalk	<input type="text"/>
shoplifting/more serious crime	<input type="text"/>	street traffic	<input type="text"/>
upkeep of adjacent properties	<input type="text"/>	condition of building or façade	<input type="text"/>
parking	<input type="text"/>	sidewalk vendors	<input type="text"/>
		noise	<input type="text"/>
other (please specify) <input type="text"/>			

**Please give us your thoughts regarding the proposed light rail transit (LRT) service:**

8. On a score of 1 to 5 (5= the most positive ranking for your establishment. 1=little or no effect on the establishment), how would you rate having LRT service on 42nd Street that includes stops on every block, a direct link to the Javits Center and improved street environment 42nd St.?

9. Pedestrian space would be expanded, providing room for outdoor cafes and advertising. If the LRT service brings more pedestrians to 42nd Street, how would this impact your business?

hotel guests/theatre attendees likely to decrease	<input type="text"/>	hotel guests/theatre attendees likely to decrease	<input type="text"/>
no effect	<input type="text"/>	don't know	<input type="text"/>
9a. If <u>increase</u> , by how much?	<5% <input type="text"/>	5-10% <input type="text"/>	>10% <input type="text"/>
9b. If <u>decrease</u> , by how much	<5% <input type="text"/>	5-10% <input type="text"/>	>10% <input type="text"/>

10. *Restaurants at hotels*: If permitted, would you consider expanding your business onto sidewalk space?

yes  no  don't know

11. Is LRT likely to draw many new tourists to the 42nd Street area?

yes  no  don't know

11a. If yes, by how much? <5%  5-10%  >10%

12. Is LRT likely to draw many new local visitors to the 42nd Street area?

yes  no  don't know

12a. If yes, by how much? <5%  5-10%  >10%

Principal,  
 Komanoff Energy Associates  
 Floyd Lapp, PhD, FAICP  
 Pamela Lippe  
 Executive Director,  
 Earth Day New York  
 Rocco Landesman  
 President,  
 Jujamcyn Theaters  
 Russell Menkes  
 General Manager,  
 Hilton Times Square Hotel  
 Howard Milstein  
 Chairman,  
 Milstein Brothers Capital Partners  
 Maura Moynihan  
 Senior Fellow,  
 Regional Plan Association  
 Dick Netzer, PhD  
 Professor,  
 NYU Wagner School  
 Louis J. Riccio, PhD, PE,  
 Former Commissioner,  
 NYC Department of Transportation  
 Elliot Sander  
 Senior Vice President  
 DMJM + Harris, Inc.  
 Mildred F. Schmertz, FAIA  
 Sam Schwartz, PE  
 Professor,  
 Cooper Union  
 Michael Sorkin  
 Director,  
 Urban Design Program,  
 City College of New York

13. With **vision42** there would be no truck traffic on 42nd Street during the day or evening. For businesses lacking freight entrances on 41st or 43rd Street, extra delivery parking space would be reserved on the nearest avenues (see diagram). Is your only freight entrance on 42nd Street?      yes       no

13a. If yes, please answer the following:

How many deliveries on 42nd St do you currently get per day?

What time(s) are these deliveries made?

Where does the truck park?

14. Would relocating truck delivery parking hurt your business?

yes

no

don't know

14a. If yes, how much?

<5%

5-10%

>10%

15. Similarly, would relocating passenger pickup and drop-off to a dedicated nearby location on the Avenue hurt your business?

yes

no

don't know

15a. If yes, how much?

<5%

5-10%

>10%

16. Do you currently dispose of trash out of your 42nd St. exit?

yes

no

don't know

17. Commercial trash would be collected at night from receptacles located at 50' intervals on the widened sidewalk. If you now use 42nd Street, would carrying trash further than your curbside impact your business?

yes

no

don't know

18. Construction of the LRT system would take at least 21 months. During that time, buses would run river to river; sidewalks and crosswalks would NOT be closed; and water and power would NOT be interrupted (see diagrams).

Active construction on each block would take 5-6 months to relocate utilities, lay track, and landscape.

Would a 5-6 month construction period impact your business?

yes

no

don't know

18a. If yes, by how much?

<5%

5-10%

>10%

19. LRT service would be operational river-to-river within 2 years of construction start. In other U.S. cities,

LRT service has increased downtown activity. Do you think a 42nd Street LRT would increase your business?

yes

no

don't know

19a. If yes, by how much?

<5%

5-10%

10-20%

>20%

Vukan R. Vuchic, PhD  
 Professor,  
 University of Pennsylvania  
 Department of Transportation  
 Paul Steely White  
 Executive Director,  
 Transportation Alternatives

**Questions 20-22 are for Hotels Only**

20. What proportion of your hotel guests are attending a convention at the Javits Center?

None  <25%  25-50%  >50%

21. If you have Javits-bound guests, how do they currently commute to Javits Center?

% by: Taxi  Corp. car  Walk  Public transport

22. The LRT Service will go directly to the Javits Center. How will this affect your business for rooms?

(Please score on a scale from 1-5 where 5 is a significant increase and 1 is no effect)

**Remaining Questions are for All Interviewees**

23. If you think there would be a negative **short term** effect on your business, what do you think would cause it?

(please score any item from 1 to 5, with 5=most negative)

	Rooms	Restaurants
disruption for customers during construction	<input type="text"/>	<input type="text"/>
elimination of car or taxi access to hotel or theater	<input type="text"/>	<input type="text"/>
limited access for deliveries or trash collection	<input type="text"/>	<input type="text"/>
construction-related environmental conditions (dust, noise)	<input type="text"/>	<input type="text"/>
other (please specify) _____	<input type="text"/>	<input type="text"/>

24. If you think there would be a positive **long term** effect on your business, what do you think would cause it?

(please score any item from 1 to 5, with 5=most positive)

more pedestrian traffic	<input type="text"/>
wider sidewalk space	<input type="text"/>
better transit access to store	<input type="text"/>
closeness to LRT stops	<input type="text"/>
lack of traffic congestion	<input type="text"/>
landscaping, benches and other streetscaping amenities	<input type="text"/>
other (please specify) _____	<input type="text"/>
<b>--or--</b>	
no positive long term effect (check if applicable)	<input type="text"/>

25. What streetscape amenities, promotional or other efforts would you propose for a new 42nd Street?

(please specify) \_\_\_\_\_

26. If the LRT takes longer to build, would your opinions on the impacts to your business change?

yes no don't know

26a. If yes, how? \_\_\_\_\_

27. Do you have any questions or comments on this proposal? \_\_\_\_\_

***Thank you for your participation. This proposal currently does not receive city approval.  
Collectively, your response, and that of your hotel and theatre neighbors, will assist in its evaluation.***

**Appendix C**  
**Transit Agency Survey**

# Transit Agency Survey



**www.vision42.org**

Roxanne Warren, AIA, Chair  
George Haikalas, ASCE, Co-Chair

1841 Broadway  
Suite 1208  
New York, NY 10023  
Tel: 212.957 0550  
E-mail: rwa@erols.com  
geohaikalas@juno.com

**advisory committee:**

Jean Claude Baker  
*Owner,*  
*Chez Josephine*

Dan Biederman  
*President,*  
*Bryant Park Restoration*

Jonathan Bowles  
*Research Director,*  
*Center for an Urban Future*

Carter Craft  
*Metropolitan Waterfront Alliance*

Janine DiGiacchino  
*General Manager, NYC*  
*Madame Tussaud's Wax Museum*

Douglas Durst  
*Co-President,*  
*The Durst Organization*

Alfred Fazio

*Thank you for participating in an important survey of possible improvements to transit services on 42nd Street. A modern, low-floor light rail line (LRT) has been proposed for surface operation river-to-river, making it much easier to travel to offices, stores, theaters, and hotels across New York's most renowned midtown street. As one of the leading transit agencies in the country to implement light rail through a downtown corridor, we would greatly appreciate your views on the impact of LRT services on retail stores, hotels and entertainment venues in your city.*

**Please tell us about your agency:**

Transit Agency Name & Address:

Survey Respondent Name & Title:

Annual ridership of your LRT system:

in 1997?  in 2002?  in 2005?

How would you define the downtown by postal zip code(s)?

Is the downtown route of your LRT auto-free in whole or part?

yes  no

Is construction currently underway to extend the LRT system?

yes  no

*If yes, please provide the following information:*

Line name:

Miles  Stations

Is LRT system expansion in the planning or design phase?

yes  no

*If yes, please provide the following information:*

Line name:

Miles  Stations

**Please give us your impressions regarding the impact of LRT service on retail stores, hotels and theaters in your downtown, either from the recent expansion or the entire system history:**

Former President & CEO,  
21st Century Rail Corporation

Jessica Flagg

Director,  
New York Climate Rescue

Tom Fox  
President & CEO,  
New York Water Taxi

Alexander Garvin  
Principal,  
Alex Garvin & Associates

Jeff Gural  
Chairman & CEO,  
Newmark & Co. Real Estate, Inc.

Ashok Gupta  
Senior Energy Economist,  
Natural Resources Defense Council

Tony Hiss  
Urbanist, Author

Arthur Imperatore, Jr.  
President  
New York Waterway

Georges Jacquesmart, PE, AICP  
Partner,  
BFJ Planning

John Johnston  
Former President & CEO,  
21st Century Rail Corporation

In your downtown, prior to construction of the LRT line but after announcement, did any of the following occur? If yes, please rank by intensity (very high=1; high=2; moderate=3; low=4; very low=5)

* assemblage of development sites	yes	<input type="text"/>	no	<input type="text"/>	rank	<input type="text"/>
* developer plans for new retail space	yes	<input type="text"/>	no	<input type="text"/>	rank	<input type="text"/>
* developer plans for new hotels	yes	<input type="text"/>	no	<input type="text"/>	rank	<input type="text"/>
* developer plans for new theaters	yes	<input type="text"/>	no	<input type="text"/>	rank	<input type="text"/>
* increase in overall property values	yes	<input type="text"/>	no	<input type="text"/>	rank	<input type="text"/>
* decrease in overall property values	yes	<input type="text"/>	no	<input type="text"/>	rank	<input type="text"/>
* move-out of retail stores/restaurants	yes	<input type="text"/>	no	<input type="text"/>	rank	<input type="text"/>
* closure of hotels or theaters	yes	<input type="text"/>	no	<input type="text"/>	rank	<input type="text"/>
* decline in business sales or rents	yes	<input type="text"/>	no	<input type="text"/>	rank	<input type="text"/>
* other (specify)_____	yes	<input type="text"/>	no	<input type="text"/>	rank	<input type="text"/>

In your downtown, during the construction phase, did the disruption caused by building the LRT system have any of the following effects? If yes, please rank by intensity, in the manner above.

* assemblage of development sites	yes	<input type="text"/>	no	<input type="text"/>	rank	<input type="text"/>
* developer plans for new retail space	yes	<input type="text"/>	no	<input type="text"/>	rank	<input type="text"/>
* developer plans for new hotels	yes	<input type="text"/>	no	<input type="text"/>	rank	<input type="text"/>
* developer plans for new theaters	yes	<input type="text"/>	no	<input type="text"/>	rank	<input type="text"/>
* increase in overall property values	yes	<input type="text"/>	no	<input type="text"/>	rank	<input type="text"/>
* decrease in overall property values	yes	<input type="text"/>	no	<input type="text"/>	rank	<input type="text"/>
* move-out of retail stores/restaurants	yes	<input type="text"/>	no	<input type="text"/>	rank	<input type="text"/>
* decline in retail/restaurant sales	yes	<input type="text"/>	no	<input type="text"/>	rank	<input type="text"/>
* closure of hotels or theaters	yes	<input type="text"/>	no	<input type="text"/>	rank	<input type="text"/>
* decline in hotel or theater occupancy	yes	<input type="text"/>	no	<input type="text"/>	rank	<input type="text"/>
* decline in commercial rents	yes	<input type="text"/>	no	<input type="text"/>	rank	<input type="text"/>
* other (specify)_____	yes	<input type="text"/>	no	<input type="text"/>	rank	<input type="text"/>

Fred Kent  
*President,*  
*Project for Public Spaces, Inc.*

Charles Komanoff  
*Principal,*  
*Komanoff Energy Associates*

Floyd Lapp, PhD, FAICP

Pamela Lippe  
*Executive Director,*  
*Earth Day New York*

Rocco Landesman

In your downtown, after LRT service was in operation, did you perceive an improvement in business activity?

*If yes, please estimate the response in percentage terms.*

* pedestrian traffic increased	yes	<input type="text"/>	no	<input type="text"/>	%	<input type="text"/>
* retail/restaurant sales rose	yes	<input type="text"/>	no	<input type="text"/>	%	<input type="text"/>
* retail/restaurant rents increased	yes	<input type="text"/>	no	<input type="text"/>	%	<input type="text"/>
* tourism/other visitation increased	yes	<input type="text"/>	no	<input type="text"/>	%	<input type="text"/>
* hotel occupancy rose	yes	<input type="text"/>	no	<input type="text"/>	%	<input type="text"/>
* hotel room rates increased	yes	<input type="text"/>	no	<input type="text"/>	%	<input type="text"/>
* theater/other venue attendance rose	yes	<input type="text"/>	no	<input type="text"/>	%	<input type="text"/>
* property tax yields increased	yes	<input type="text"/>	no	<input type="text"/>	%	<input type="text"/>
* other (specify) _____	yes	<input type="text"/>	no	<input type="text"/>	rank	<input type="text"/>

*President,*  
*Jujamcyn Theaters*

Russell Menkes  
*General Manager,*  
*Hilton Times Square Hotel*

Howard Milstein  
*Chairman,*  
*Milstein Brothers Capital Partners*

Maura Moynihan  
*Senior Fellow,*  
*Regional Plan Association*

Dick Netzer, PhD  
*Professor,*  
*NYU Wagner School*

Louis J. Riccio, PhD, PE,  
*Former Commissioner,*  
*NYC Department of Transportation*

Elliot Sander  
*Senior Vice President*  
*DMJM + Harris, Inc.*

Mildred F. Schmertz, FAIA

Sam Schwartz, PE  
*Cooper Union*

If available, please provide the specifics on new developments in the downtown. We would appreciate learning the specifics of new stores, hotels, theaters, other entertainment venues, as well as dwelling units and office space in the downtown. Please provide the number, square footage, and investment value if known.

\* new retail stores and restaurants \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_

\_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_

\* new hotels \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_

\_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_

\* new theaters/other entertainment venues \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_

Michael Sorkin  
*Director, Urban Design Program  
City College of New York*

Vukan R. Vuchic, PhD  
*University of Pennsylvania  
Department of Transportation*

Paul Steely White  
*Executive Director,  
Transportation Alternatives*

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If your agency, consultants or academics have prepared assessments of the economic impact of your LRT service on property development and business activity in your downtown, we would appreciate knowing of them. Please provide any appropriate citations in the following space.

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***Thank you for your participation***