ZONING ORDINANCE ADVISORY COMMITTEE **THURSDAY, September 3, 2020**

DALLAS DEVELOPMENT CODE AMENDMENT

FILE NO. DCA 190-002

Parking – Local and National Parking Studies, Part 2 **Planners: Andreea Udrea, PhD, AICP**
Lori Levy, AICP

Consideration of amending off-street parking and loading requirements including, but not limited to, hotel, restaurant, multifamily, alcoholic beverage establishment, and public and private schools uses in the Dallas Development Code.

BACKGROUND:

On September 5, 2019, City Plan Commission (CPC) authorized a public hearing to consider amending Chapters 51 and 51A of the Dallas Development Code, with consideration to be given to amending off-street parking and loading requirements including, but not limited to, hotel, restaurant, multifamily, and alcoholic beverage establishment uses, and transit-oriented development.

The intent of this code amendment is to review the current parking regulations and based on research, best practices, and other cities approach to parking requirements, determine the need to amend the City Code and make a recommendation and proposal.

Staff will provide reports on the following general research direction to build on information, culminating with recommendations and a proposal:

- *Current Parking Regulations _ provided at the June 18, 2020 ZOAC meeting*
- *City of Dallas Planned Development Districts _ provided at the July 9, 2020 ZOAC meeting*
- *Index Cities and Other Cities Research _ provided at the August 6, 2020 ZOAC meeting*
- Local and National Parking Studies, Part 1 _ provided at the September 3, 2020 ZOAC meeting
- **Local and National Parking Studies, Part 2**
- Board of Adjustment Parking Reductions_ provided at the September 3, 2020 ZOAC meeting
- Citywide Plans – Vision/Goals_ provided at the September 3, 2020 ZOAC meeting
- Feedback from Interested parties, Industry, Developers and Communities and Neighborhoods.

PROJECT WEBPAGE:

https://dallascityhall.com/departments/sustainabledevelopment/planning/Pages/parking-code-amendment.aspx

RESEARCH AND STAFF ANALYSIS:

Scope and methodology:

The scope of this report is to put together a collection of resources for parking-related topics that gives a general understanding of the major literature about parking, offering a wide image of parking issues and trends nationwide. Furthermore, the report intends to apply these gained lenses to better understand parking in Dallas; what is the current state, the patterns and behavior, how is parking and transportation being used. Another goal of this report is to gather data and create a collection of studies and resources at national and local level.

The report was conducted on two main levels, a general research of the global data and analysis that constitutes a major resource when studying parking and, a local research on studies, from regional level, to major parts of the city, up to very narrowly focused location and topics.

The report is a collection of excerpts from research and studies that are either free resource on the internet or submitted to the city and with author's permission. Each article or study is identified, the author is listed, and, where applicable, the client too, and includes the direct link to the entire document, where applicable. Each paragraph and illustration is annotated with the page number.

The criteria for selection of the studies is based on the material being from a trusted and primary source and containing verified information and data. The intent of this report is to highlight trends, tools, and data, and to assemble a general assessment of the current situation and trends nationwide. Given the length of this collection of excerpts, the report is split into two parts:

Part 1 – General research and high-level parking studies. Contains excerpts grouped by author, from more comprehensive views to research focused on certain uses or tools

Part 2 – Parking Studies for Dallas. Contains excerpts from studies from larger areas of the city, to larger multiuse locations, and to focused analysis on certain single uses.

Summary:

The following are samples of topics, information, and data that is referenced by the research and studies contained in this report:

Parking as a tool for Transportation Demand Management
Defining parking problems
Level of service for parking
Parking costs and costs of parking requirements
Parking management
Parking requirements comparisons and solutions
Parking reforms
Solution assessment
Parking impacts on housing affordability
Cruising for parking
Critique of parking minimums
Critique of free parking
Parking data about certain uses: multifamily, restaurants, office, high schools
Convertible parking garages

Environmental-friendly solutions – watershed urbanism.

For Dallas:

Autonomous transportation – solution for large scale, neighborhood-wide shared parking
Parking analysis for larger areas – Preston Center and Downtown with detailed parking assessments and data on parking utilization and accumulation
Parking analysis for shopping centers
Design guidelines
Environmental data
Housing data
Regional public transportation strategies
Parking data about certain uses: multifamily, restaurants with drive-through, grocery stores.

CONTENT:

Part 1 - General Research and High-Level Parking Studies

Victoria Transport Policy Institute, Todd Litman

Transportation Demand Management (TDM) Encyclopedia, Victoria Transport Policy Institute, updated April 2014

Parking Evaluation. Evaluating Parking Problems, Solutions, Costs, and Benefits, TDM Encyclopedia, Victoria Transport Policy Institute, updated April 2017

Parking Solutions. A Comprehensive Menu of Solutions to Parking Problems, TDM Encyclopedia, Victoria Transport Policy Institute, updated 17 April 2017

Parking Management: Strategies for More Efficient Use of Parking Resources, Victoria Transportation Policy Institute. TDM Encyclopedia, 2015, updated in 2018

Parking Management Strategies, Evaluation and Planning, Victoria Transport Policy Institute, September 2016

Parking Requirement Impacts on Housing Affordability, Victoria Transport Policy Institute, June 2020

Donald Shoup

Donald Shoup, "**Parking Reform Will Save the City. Cities that require builders to provide off-street parking trigger more traffic, sprawl, and housing unaffordability. But we can break the vicious cycle**.," *Bloomberg-CityLab*, September 20, 2019

Donald Shoup, "**Cutting the Cost of Parking Requirements**," Access, Number 48, Spring 2016, pp. 26-33

Donald Shoup, "**The High Cost of free Parking Requirements**," *Parking and the City*, Donald Shoup Ed, Routledge, 2018, pp. 81-96

Vinit Mukhija and Donald Shoup, "**Quantity versus Quality in Off-Street Parking Requirements**," *Journal of the American Planning Association*, Vol. 72, No. 3, Summer 2006, pp. 296–308.

Donald Shoup, "**Cruising for parking**," "*Transport Policy* 13, 2006, pp. 479–486

Michael Manville and Donald Shoup, "**People, Parking, and Cities**," *Journal of Urban Planning and Development*, Vol. 131, No. 4, December 2005, pp. 233-245.

Donald Shoup, "**Truth in Transportation Planning**," *Journal of Transportation and Statistics*, Vol. 6, No. 1, 2003, pp. 1-16.

Donald Shoup, "**The trouble with minimum parking requirements**," *Transportation Research*, Part A 33, 1999, pp. 549-574

Donald Shoup, "**Instead of Free Parking**," Access, Number 15, Fall 1999, pp. 8-13

Parking Code Guidance: Case Studies and Model Provisions, MTC Smart Growth Technical Assistance: Parking Reform Campaign, by Dyett & Bhatia; Nelson Nygaard, *Prepared for* Valerie Knepper, MTC Regional Parking Initiative, June 2012

APA

List of studies and reports on parking-related issues

Planning for Shared Mobility, APA, Planning Advisory Service, PAS Report 583, by Adam Cohen and Susan Shaheen, July 2016

Focused Studies and Data

The United States of Parking, by Seth Goodman, website

The Transformation of Parking. Multiple factors are converging to disrupt everything we know about parking, by/for: National Apartment Association, July 2018

Stalled Out. How Empty Parking Spaces Diminish Neighborhood Affordability, by: The Center for Neighborhood Technology, Searle Funds at the Chicago Community Trust, March 2016

Parking In Lieu Fees, Kimley Horn and Associates Inc, Parking Planning White Paper Series

Convertible Parking Garages

Adele Peters, "**These future-proof parking garages can easily morph into offices or housing**" *FastCompany*, World Changing Ideas, January 14, 2019

Charles LaCalle, Dreamit UrbanTech, "**Real Estate Developers Begin to Future-Proof the Parking Garage**," *Dreamit*, February 1, 2018

Alek Pochowski, Bryan Graveline, "**What's the Future of Parking Garages?**" *Kittelson and Associates*

Related domains

Conway Urban Watershed Framework Plan. A Reconciliation Landscape for Little Creek-Palarm Creek Sub-watershed, by: University of Arkansas Community Design Center, an outreach center of the Fay Jones School of Architecture + Design; Fay Jones School of Architecture + Design; University of Arkansas Department of Biological and Agricultural Engineering, and Office for Sustainability; Arkansas Natural Resources Commission, January 2016

Part 2 - Parking studies for Dallas

Areas of the City ___*(pg 7-57)*

Dallas Midtown Autonomous Transportation System and Shared Parking Feasibility Study, ATS Study by Jacobs Engineering; LEA Elliott; Pacheco Kock; Toole Designs; KK Strategies; DeAngelo Rail Services, Parking Study: Walker Consultants; Coleman Associates, for: North Central Texas Council of Governments, September 2019

Northwest Highway and Preston Road Area Plan – Appendices, Parking Study Highlights, by Kimley-Horn, December 2016

Preston Center Parking Garage Study, by Walker Consultants, for: North Central Texas Council of Governments and City of Dallas, March 31, 2020

City Center TIF District Parking Strategy Study, by Kittelson & Associates, Inc, for: The City of Dallas, DRAFT, June 2001

Downtown Dallas 21st Century Strategic Parking Plan, by Kimley-Horn and Associates Inc, for: Downtown Dallas inc; Moore Iacofano Goltsman, January 2011

Downtown. Parking Accumulation Study, by DeShazo, Tang & Associates, Inc., for: The New Statler, December, 2016 and 2019

Dallas Area Rapid Transit Red & Blue Line Corridors Transit-Oriented Development Parking Study, Project Partners: North Central Texas Council of Governments; Dallas Area Rapid Transit; City of Dallas; City of Garland; City of Plano; City of Richardson, Consultant Team:

Nelson\Nygaard Consulting Associates; C.J. Hensch & Associates, Gateway Planning, **December 2019**

General guidelines and studies ___*(pg 58-63)*

Urban Design Guidelines for Projects Located in City of Dallas Tax Increment Financing Districts, City of Dallas, Office of Economic Development, Dallas CityDesign Studio, updated February 2015

Smart Growth for Dallas Decision Support Tool, by Trust for Public Land, bcWorkshop, Texas Trees Foundation, Dallas Parks and Recreation Department

Dallas Water Gardens Feasibility Analysis, by Sakura Robinson; Halff; Terradyne, for: North Central Council of Governments, June 30, 2019

2018 State of Dallas Housing Report. Regional Housing Production, Population Change, and Housing Accessibility, by: The buildingcommunityWORKSHOP, May 2018

Access North Texas. Regional Public Transportation Plan for North Central Texas, by North Central Texas Council of Governments, March 2018

Multiple Use ___ *(pg 64-95)*

NorthPark Center Parking Analysis, by DeShazo, Tang & Associates, Inc., April 2008

NorthPark Center Parking Analysis, by DeShazo, Tang & Associates, Inc., February 2010

NorthPark Center Validation Study, by DeShazo Group, Inc., December 9, 2013

Preston Trail Village Parking Analysis, by: DeShazo, Tang & Associates, Inc., May 2006

Lakewood Village Shopping Center Parking Analysis, by Christy Lambeth, November 2019

Mockingbird / Abrams Shopping Center Parking Analysis excerpt, by DeShazo Group, June 2011

Village at Preston Hallow Parking Analysis, by DeShazo Group, February 2013

Village at Preston Hallow Technical Memorandum, by DeShazo Group, April 2017

The Hill Parking Analysis, by DeShazo Group, October 2015

Ross Avenue and McCoy Street Shopping Center, by Christy Lambeth, February 2020

Single Use ___*(pg 96-103)*

Multifamily

Comparative table, by Scot Johnson, Kimley-Horn and Associates, Inc., Excerpt from a Parking Analysis, data collected 2011, 2015 - 2020

Senior Living, Retirement Housing

Memorandum, by Scot Johnson, Kimley-Horn and Associates, Inc., April 2017

Restaurants with Drive-Through

1717 W Mockingbird Lane, (McDonald's), by: Christy Lambeth, April 2020

General merchandise or food store greater than 3,500 square feet.

Comparative table, by Scot Johnson, Kimley-Horn and Associates, Inc., Excerpt from a Parking Analysis, December 2012

Part 2 - Parking studies for Dallas

Areas of the City

Dallas Midtown Autonomous Transportation System and Shared Parking Feasibility Study

Prepared for: North Central Texas Council of Governments
Prepared by:
ATS Study: Jacobs Engineering; LEA Elliott; Pacheco Kock; Toole Designs; KK Strategies; DeAngelo Rail Services
Parking Study: Walker Consultants; Coleman Associates
September, 2019
(360 pages)
http://dallasmidtownvision.com/wp-content/uploads/2020/03/Dallas-Midtown-ATS-ES.pdf
https://www.nctcog.org/trans/plan/transit/emerging-transit-trends/people-mover

Existing zoning: PD No. 887
Form-based Code, defaults to Art XIII

The Study assessed the utility and technical feasibility of an autonomous transportation system to achieve larger district-wide mobility and sustainability goals.

The Study recommends a district-wide shared mobility parking model wherein a number of strategically located structures, closely linked to internal circulation options and pedestrian infrastructure, would serve the whole. This strategy would be complimented by a series of active transportation demand management initiatives to not only discourage the use of single-occupancy vehicles in traversing the site, but also to encourage alternative modes of arrival to the district itself. (pg ES-1)

Recommended route alignment: **Elevated 2.2-mile loop circulating the Dallas Midtown area in both directions**

Driverless, automated single-vehicle system on a dedicated, grade-separated facility. Fixed route and stops. Up to 18 vehicles circulating.

Vehicle Capacity:
12 – 21 passengers

System capacity: **840 persons/hour (15,120 persons/day)**

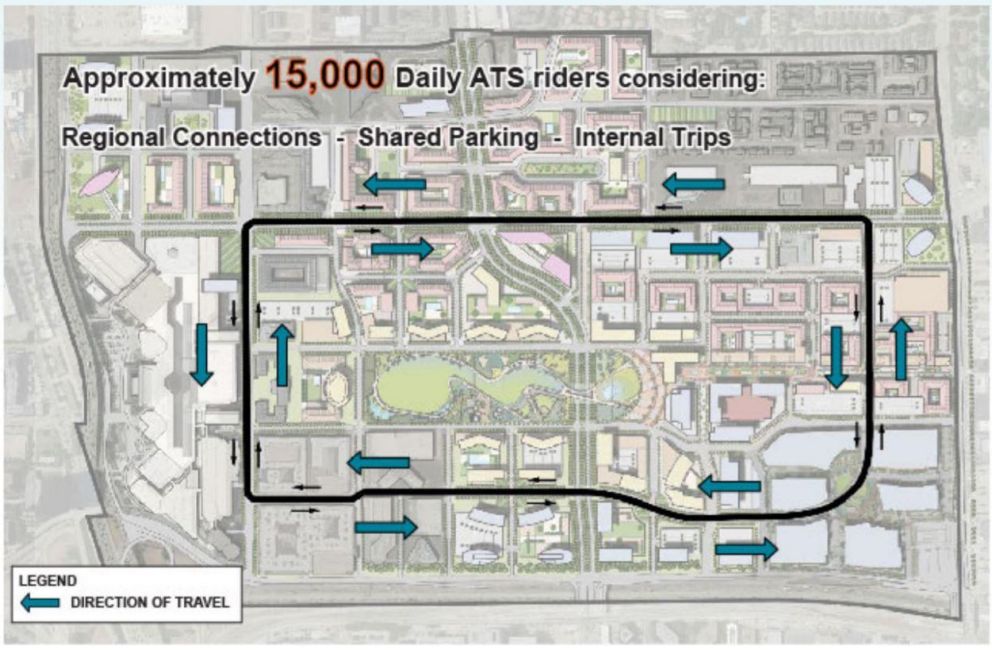
Implementation Cost

Conceptual estimate based on ROW acquisition, utility relocation, necessary traffic improvements, station and guideway construction, and vehicle procurement.

Capital Cost:	Maintenance Cost:
$95M	**$1.4M/year**

(pg ES-2)

Estimated Daily ATS Ridership



(pg-3)

Preston Center
NORTHWEST HIGHWAY AND PRESTON ROAD AREA PLAN - APPENDICES
Parking Study Highlights
Prepared by: Kimley-Horn
December 2016
(2 pages)
https://dallascityhall.com/departments/pnv/Documents/NWH-Preston%20Rd%20Area%20Plan.pdf

Existing Zoning: PD No. 314
Parking ratios per Chapter 51A + additional reduction options and credit for the 800 ps in public parking garage

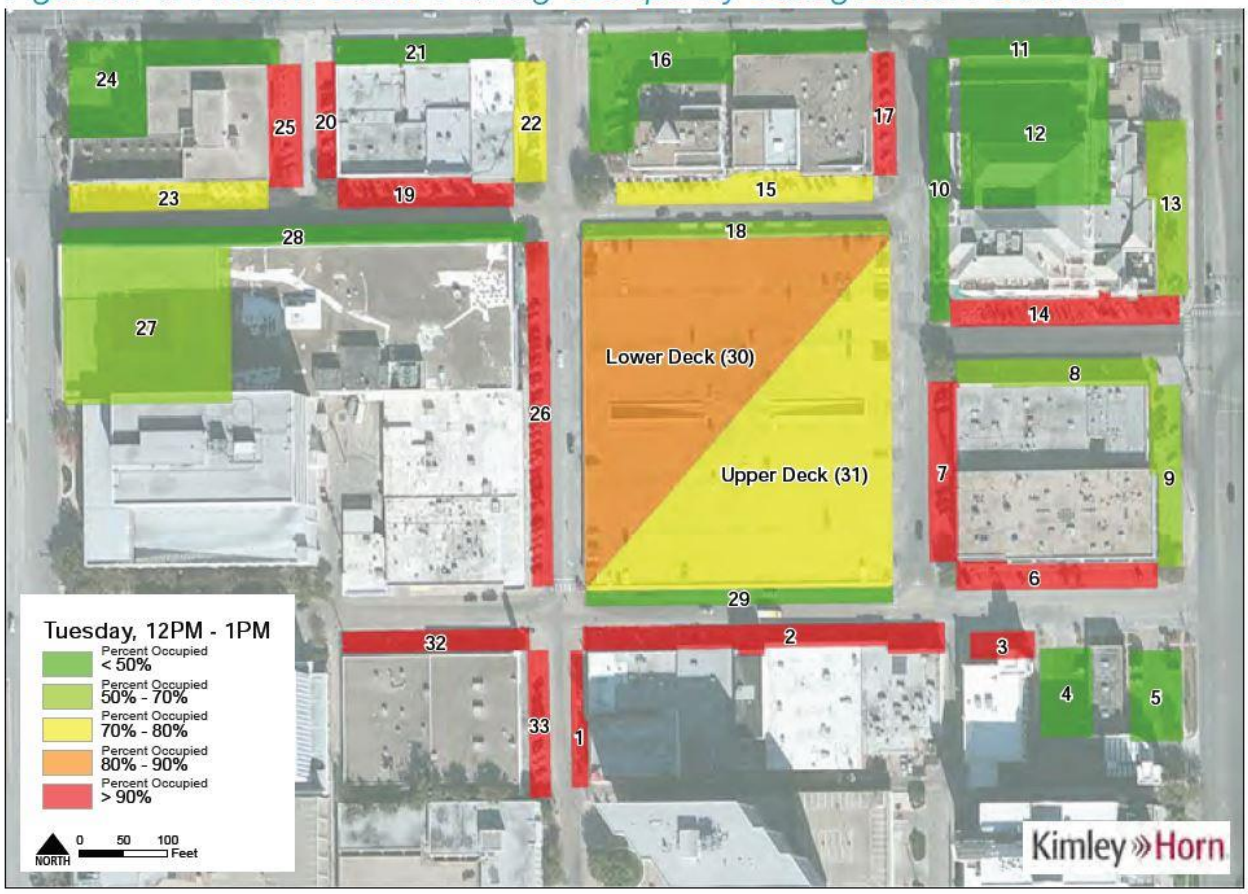
Adequacy of Preston Center parking for the retail is an issue that is often debated. A weeklong parking study was conducted by the consultants in January 2016 to analyze the existing parking supply and demand for Preston Center. This study was conducted for 8 hours a day for 7 days straight.

The parking in Preston Center currently consists of a mix of on-street facilities, off-street small lots, a two-level parking deck, and several garages that primarily serve tenants (see Figure IV-1 and IV-3). The on-street facilities are full during peak periods near the parking deck, and the parking deck peaks at approximately 80% occupancy. The private and reserved spaces are at approximately 50% occupancy on weekdays throughout the day (although owners of those lots strongly dispute those findings), and public parking facilities are approaching the recommended effective capacity of 85% during the midday peak period. Figure IV-2 demonstrates the overall occupancy for the parking within Preston Center broken down hourly and by day. Parking is busiest during the weekday lunch peak (see Figure IV-2). It is important to note that at the time of the Parking Study, half of Preston Center's largest leasable property adjacent to the

garage (the former Sanger Harris store, now occupied by Marshall's, among others) was empty, alleviating considerable demand on both street parking and the city-owned parking garage.

Besides counting parking supply and demand, the average parking duration was summarized for each parking area. Figure IV-4 shows the average duration observed on a weekday. Another item worth noting is that a large number of vehicles (over 100) on the lower city-owned parking deck were observed to exceed the three-hour time limit that is meant to promote turnover; this implies that employees working in Preston Center are using this parking which is meant for visitors. It is recommended that employees be encouraged to park on the upper deck and enforcement of parking restrictions be increased to enhance the turn-over of high demand facilities. In addition, a parking guidance system is recommended to provide parking space availability at the parking deck. (pg IV-2)

Figure IV-1: Preston Center Parking Occupancy During Lunch Peak Hour



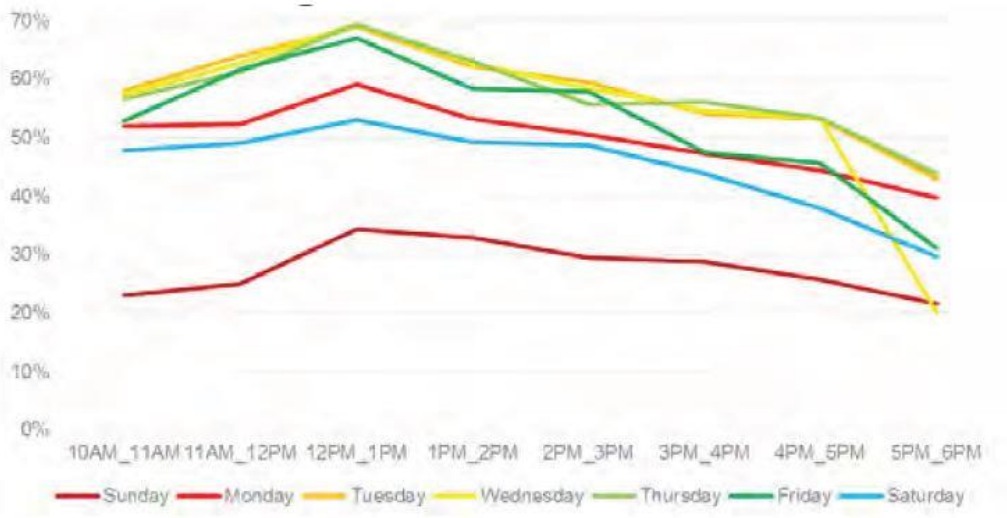
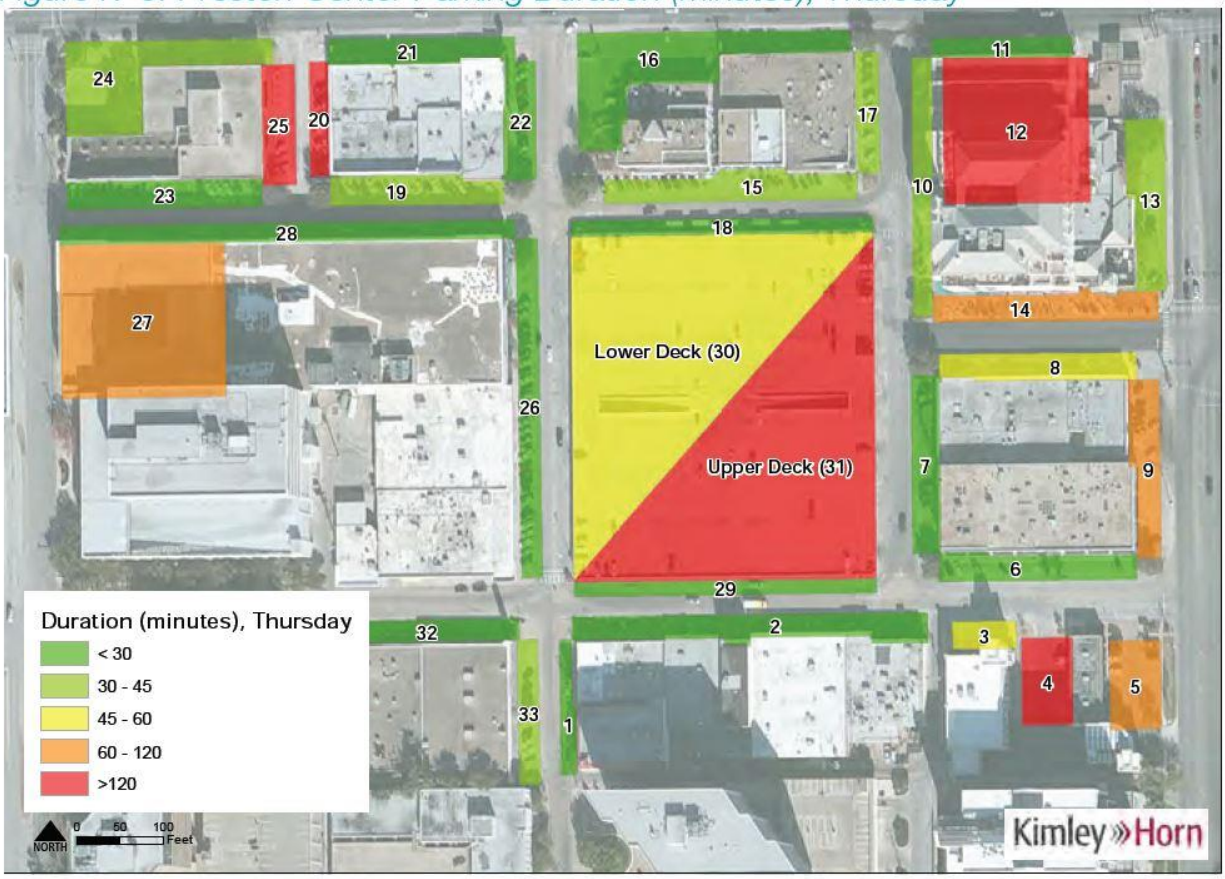
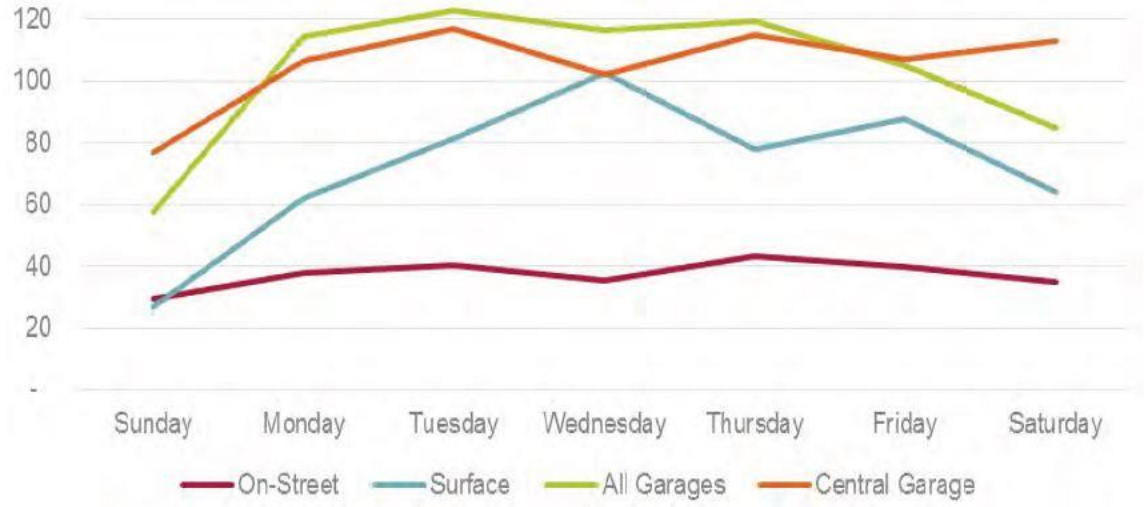


Figure IV-2: Preston Center Overall Parking Occupancy (Garage, On-Street, Surface)

Figure IV-3: Preston Center Parking Duration (minutes), Thursday





(ABOVE) Figure IV-4: Preston Center Average Parking Duration (Minutes)

PRESTON CENTER PARKING GARAGE STUDY

Prepared for: North Central Texas Council of Governments and City of Dallas
Prepared by: Walker Consultants
March 31, 2020
(145 pages)
https://www.nctcog.org/nctcg/media/Transportation/DocsMaps/Plan/Landuse/Dev/PrestonCenterReport_Final_033120.pdf

SECTION 1 - EXECUTIVE SUMMARY

In 2016, the City of Dallas and the North Central Texas Council of Governments (NCTCOG) developed a community vision for the neighborhoods surrounding the Northwest Highway and Preston Road interchange in Dallas, Texas, entitled the Northwest Highway and Preston Road Area Plan (also referred to in this document as the Area Plan). A central recommendation of the plan was the redevelopment of the aging Preston Center Parking Garage, an 800-space, two-level structure built in the 1960s on City-owned property. The redevelopment vision championed by the community included an underground parking structure with an at-grade community park on top. (pg vi)

In response to this recommendation, NCTCOG initiated the Preston Center Parking Garage study. The key objectives of this study included:

- Evaluating and recommending technical needs for the new parking structure.
- Assessing the feasibility of the recommended underground structure and community park.
- Assessing the feasibility of alternative options.
- Confirming and refining the community vision.
- Developing a framework for evaluating design concepts.
- Creating a series of design concepts that meet technical requirements and the refined community vision.
- Identifying next steps in implementing the community vision.

This report comprises the key findings and recommendations from the study, which are summarized herein. (pg vi)

TECHNICAL FEASIBILITY OF THE COMMUNITY VISION

Parking Supply Needs: An update was conducted to the parking sufficiency study performed by Kimley-Horn as part of the Area Plan, and projected sufficiency assuming full tenant occupancy in Preston Center. Based on this analysis, it is recommended that the redeveloped Preston Center Parking Garage be sized at 1,200 spaces (replacement plus 400 additional) to accommodate new and existing demand and provide a high level of service for parking patrons. (pg vii)

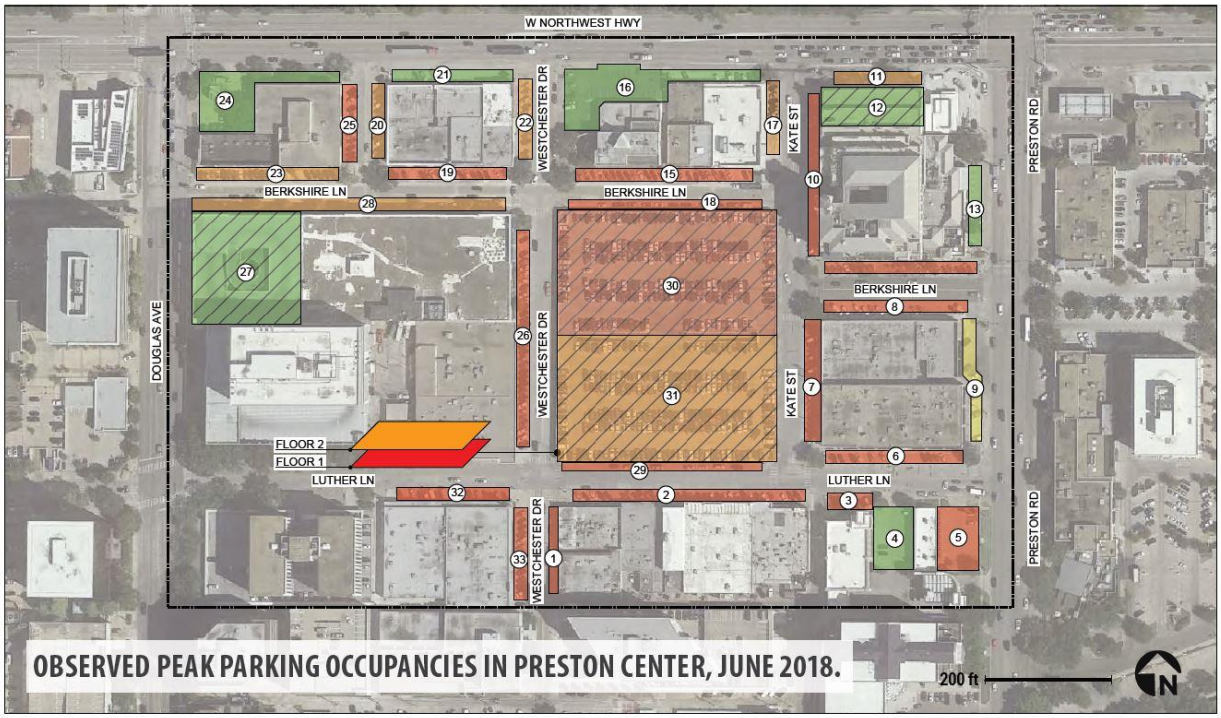
Condition of the Existing Garage: It was found that many factors impeded the ability of the existing Preston Center Parking Garage to serve parkers, including structural wear and damage, age, lighting, circulation and access, signage and wayfinding, concrete and striping conditions, and cleanliness. (pg viii)

Technical Feasibility of Area Plan Recommendation: The technical viability of the community vision set forth in the Area Plan was established, but there remains the need to explore various considerations, including:

Garage Features: Functional design (meaning ingress and egress, floor plate layout, ramp sloping, and other technical attributes), security, and technology measures are needed for an effective, high-service underground structure.

Community Park Features: Technical recommendations center around creating a usable green space with construction planned concurrently with the garage redevelopment to avoid an extended active construction period.

Vehicular and Pedestrian Access: The existing garage's undefined ingress and egress points have contributed to a deteriorated access environment and increased vehicular and pedestrian conflicts. Clear, defined, and industry standard vehicular and pedestrian access points are essential to a successful garage redevelopment. (pg viii)



WEEKDAY LUNCHTIME PARKING OCCUPANCY BY AREA

Study Area Limit
On-Street/Off-Street Parking
Garage Parking

(XX) Lot/Garage Identification

12. Berkshire Court
27. Pavilion Garage
30. Preston Center Parking Garage Level 1
31. Preston Center Parking Garage Level 2

Occupancy Percentage:
0% - 50%
51% - 75%
76% - 90%
91% - 100%

(pg viii)

DESIGN CONCEPTS

NCTCOG, the City of Dallas, and community partners developed two conceptual designs for redevelopment of the parking garage site and assessed them using the evaluation framework. Note that both concepts comprise full, unphased demolition of the existing structure.

• **Concept 1 - 100% Underground with a Full-Site Park:** Concept 1 comprised parking provided fully sub-grade, with an at-grade park spanning the full site (2.9 acres).

• **Concept 2 - Hybrid Parking with Partial-Site Park:** Concept 2 comprised a bifurcation of the site, with a partial-site, at-grade park (park sizing options between 0.9-acre to 1.4-acre parks were analyzed, discussed further on pages 57-61), at- and above-grade parking on the remaining footprint, with two levels of below-grade parking spanning the full footprint. The park size could be expanded dependent on the development footprint.

Of the concepts presented as part of this study, it was recommended to pursue Concept 1 based on the relatively insubstantial projected cost and construction timeline differences between the concepts and Concept 1's ability to better fulfill qualitative design criteria. (pg x)

The following figures depict Concept 1 from aerial and side views.

(pg x and xi)

SECTION 2 - EXISTING CONDITIONS

Figure 2.1: Existing Conditions Key Takeaways

Focus Area	#	Key Takeaway
Background and Context	1	A license agreement between the City of Dallas and the Preston Center West Corporation, a group of private citizens with ownership stake in the properties surrounding the garage, dictates that the garage site must be used for public parking.
	2	The Preston Center West Corporation has veto power over the ultimate design selected for an updated parking garage.
	3	Preliminary conversations with both the City and the Corporation indicate that both have similar goals for a new parking structure, including a high level of service and a reduction in congestion on Preston Center's internal roadways.
Existing Parking System Supply, Demand, and Management	1	The overall Preston Center parking system (including publicly available on-street, surface, and structured parking) experienced peak occupancy on a weekday between 12:00 and 1:00 PM, with a total occupancy of 71%. The Preston Center Garage was 95% occupied at the peak hour.
	2	Current vacancy levels in the study area are between 10%-15%. Assuming 100% occupancy, recommended supply should reach 1,200 spaces to accommodate potential intensification of the sites surrounding the facility.
	3	Several considerations related to enforcement, management structure, and information-sharing could improve the overall efficiency and cohesiveness of the Preston Center parking system as a whole.
	4	Several factors severely impede the ability of the Preston Center Garage to serve its patrons well, including age, circulation and access, lighting, concrete and striping conditions, and cleanliness.
Traffic Circulation, Vehicular Access, and Multimodal Mobility	1	The study area is bounded and accessed by several major roadways, including Northwest Highway, Preston Road, and the Dallas North Tollway. Circulation immediately around the garage is characterized by one-way, counterclockwise, streets.
	2	The existing traffic patterns combined with a lack of multimodal amenities (including non-continuous and poorly maintained sidewalks) result in an unfriendly environment for pedestrians and cyclists.

BACKGROUND AND CONTEXT

Public parking has been the use and purpose of the Preston Center Garage site for many years—since 1950, and the current garage site has been known as the "parking plaza" for Preston Center's many visitors and other key user groups. Operation of the Preston Center Garage is influenced by the relationship between two key parties: The City of Dallas and the Preston Center West Corporation (PCWC), a group of private citizens and/or corporations with ownership stake in the properties surrounding the garage. (pg 3)

EXISTING PARKING SYSTEM: SUPPLY, DEMAND, & MANAGEMENT

EXISTING PARKING SUPPLY AND PEAK PARKING DEMAND

The Area Plan included seven, eight-hour days of parking demand data collection in the study area in January 2016. The consensus result was that parking demand at Preston Center peaks on weekdays at lunchtime, and that the parking availability issues the area experiences are concentrated within the 11:30-

1:30 timeframe on weekdays. Based on this information, collected parking demand counts were collected during the lunchtime peak period (12:00 - 1:00 PM) on Wednesday June 13, 2018.

Figure 2.3: Existing Conditions Parking Supply and Peak Lunchtime Demand

Type	User Group	Number of Spaces	Peak Occupancy	Peak Percent Occupancy
On-Street	Time Restricted	291	282	97%
	Reserved	74	40	54%
	Loading	2	2	100%
	ADA	12	4	33%
	Unrestricted	30	27	90%
	Total	**409**	**355**	**87%**
Off-Street Surface	Regular	109	50	46%
	ADA	4	0	0%
	Total	**113**	**50**	**44%**
Pavilion Garage	Regular	292	86	29%
	ADA	7	1	14%
	Total	**299**	**87**	**29%**
Berkshire Court	Reserved	249	86	35%
	Visitor	62	44	71%
	ADA	9	4	44%
	Total	**320**	**134**	**42%**
Preston Center Garage	ADA (1st Floor)	10	8	80%
	3-Hour (1st Floor)	404	404	100%
	Unrestricted (2nd Floor)	388	346	89%
	Total	**802**	**758**	**95%**
	Grand Total	**1,943**	**1,384**	**71%**

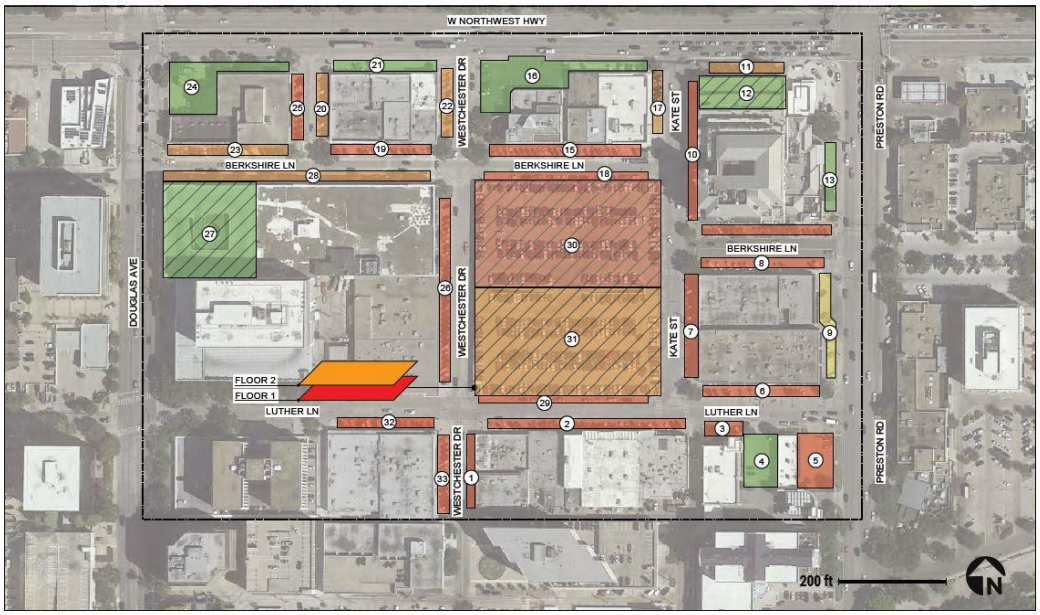
Figure 2.4: Parking Inventory and Peak Occupancy Summary

	Publicly-Available/Unrestricted Parking	Restricted Parking
Inventory	1,516	427
Peak Occupancy	1,197	187
Peak Occupancy %	79%	46%

(pg 6)

Generally speaking, the public parking available, whether on-street parking or at the Preston Center Garage, was effectively full during the lunchtime peak period, with unreserved on-street parking 97% occupied, and the Preston Center Garage 95% occupied (total of both levels). The one exception to this were the on-street parking spaces that are reserved for individual retail tenants, which were only 54% occupied. Reserving spaces for individual uses results in an inefficient use of parking assets. (pg 7)

Figure 2.5: Weekday Lunchtime Parking Occupancy by Area



WEEKDAY LUNCHTIME PARKING OCCUPANCY BY AREA

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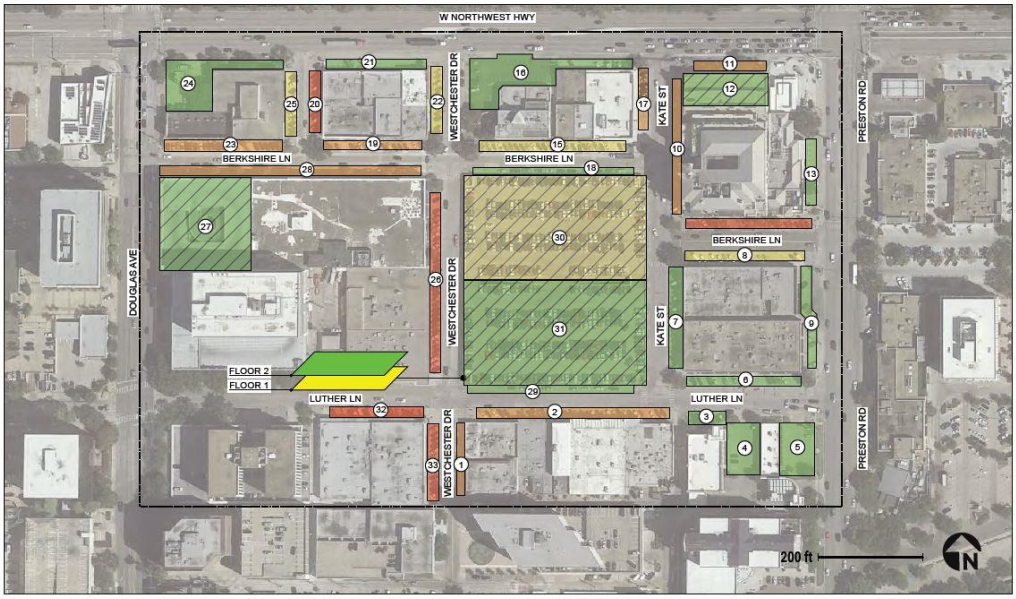
31. Preston Center Parking Garage Level 2

Occupancy Percentage:
0% - 50%
51% - 75%
76% - 90%
91% - 100%

(pg 8)

Figure 2.6: Saturday Lunchtime Parking Occupancy by Area



SATURDAY LUNCHTIME PARKING OCCUPANCY BY AREA

Study Area Limit
On-Street/Off-Street Parking
Garage Parking

(XX) Lot/Garage Identification

12. Berkshire Court
27. Pavilion Garage
30. Preston Center Parking Garage Level 1
31. Preston Center Parking Garage Level 2

Occupancy Percentage:
0% - 50%
51% - 75%
76% - 90%
91% - 100%

(pg 9)(…)

Parking Turnover Sample

A turnover survey was performed in select locations to gather a sampling of whether time restrictions were being observed both on-street and at the ground level of the Preston Center Garage. Data was recorded at 9:30 AM, 11:30 AM, 1:30 PM and 3:30 PM on Wednesday June 13, 2018.

Figure 2.7 summarizes the on-street turnover sample collected on June 13, 2018. The on-street parking sample consisted of all time-restricted parking and did not include any ADA spaces. The number of "times" a vehicle was counted signifies the number of instances its presence was recorded within the period in which data was collected. Vehicles recorded 2 times were present for at least two hours. Vehicles recorded 3 times were present for at least four hours. Vehicles recorded 4 times were present for at least six hours. (pg 10)

Figure 2.7: Weekday Turnover Sample – On-Street

Zone	Total Spaces [1]	Number of Vehicles Counted		
		4 Times	3 Times	2 Times
32	16	4	1	3
26	29	2	1	6
19	17	0	1	3
20	12	2	0	7
25	11	0	4	3
18	14	1	0	0
15	23	2	1	7
Total	**122**	**11**	**8**	**29**
Percent of Total	**###**	**9.0%**	**6.6%**	**23.8%**

1Excludes ADA Spaces

(pg 10)

As shown in **Figure 2.7**, approximately 15.6% of the on-street parking spaces in the sample areas intended for short-term customer parking (2 hours or less) were occupied by long-term parkers during the lunchtime peak. (pg 10)

Figure 2.8 summarizes the off-street turnover sample collected on June 13, 2018 on the first level of the Preston Center Garage. This parking is 3-hour time restricted parking. Four rows of parking were sampled on the 1st level, or approximately 25% of the level's spaces. (pg 10)

Figure 2.8: Weekday Turnover Sample – Preston Center Garage First Floor

Zone	Total Spaces [1]	Number of Vehicles Counted	
		4 Times	3 Times
P1 Garage	25	4	4
	31	1	7
	31	4	10
	26	3	6
Total	**113**	**12**	**27**
Percent of Total	**###**	**10.6%**	**23.9%**

[1]Excludes ADA Spaces

(pg 11)

Approximately 34.5% of the parking spaces in the sample were occupied by long-term parkers (vehicles recorded as parked in the same space 3 or more times during the data collection period) during the lunchtime peak. (pg 11)

Recommended Near-Term Parking Supply

Based on this need, the preliminary recommended supply for the Preston Center Garage is 1,000 parking spaces (…). The occupancy goal for on-street parking should be approximately 90%, with a peak occupancy goal of 85% in parking structures. The preliminary recommended supply and projected demand assume full occupancy at Preston Center, as well as permanent increased utilization of the Pavilion Garage, but does not assume any additional land use is added to the study area that would utilize the Preston Center Garage to satisfy its parking needs. (pg 13)

Parking Garage Conditions & Level of Service

The roughly 275,000 sq. ft. Preston Center Garage is 800 spaces, split between 2 levels—a ground level and a roof level. The garage was built over an existing surface lot in 1965 and completed in 1966, with the original surface lot comprising the ground level, and a new roof level constructed above. (pg 17)

The structure's open design, wide drive aisles and simple ramping system are positive elements. However, several conditions—both a function of design and of wear-and-tear commensurate with an over 50-year-old structure—inhibit the ability of the garage to adequately service its patrons. These include:

- **Age:** The structure, completed in 1966, is over 50 years old and is at or closely approaching the end of its useful life. Improvements to the garage at this point in its lifecycle can improve (at least temporarily) the aesthetic condition of the garage but are unable to permanently solve structural problems associated with an aging facility. Maintenance costs of the garage are likely to increase dramatically over time as more structural failures occur due to wear-and-tear
- **Circulation and access:** The roof level deck was constructed over an existing surface lot (now the first level of the structure) with no real changes to the surface lot's existing configuration or circulation patterns, which have patrons exiting drive aisles onto roadways to get to the next drive aisle—effectively making the one-way streets surrounding the garage its internal circulation network. This not only creates traffic congestion on these roadways and frustration for thru-travelers; it also prevents, in practical terms, the installation of a parking access and revenue control system (PARCS) as there are too many entry/exit points to effectively control access.
- **Lighting:** Despite recent upgrades to LED bulbs, the lighting configuration combined with ceiling height and design components have resulted in a dimly-lit first floor, creating an unfriendly environment for parkers (and especially pedestrians returning to their vehicles after dark) and making it difficult for patrons to read signage.
- **Concrete and striping conditions:** Portions of the structure, particularly along the ramp and on the roof level, suffer from concrete spalling and cracking. On the roof level, faded striping contributes to mis-parking and a general lack of parking efficiency. Note, however, that a restriping would be unlikely to result in any tangible benefit in terms of effective supply in the structure.
- **Cleanliness:** The first floor of the garage has significant dust and dirt pile-up and would benefit from a regular power washing schedule in the near-term. (pg 18)

TRAFFIC CIRCULATION, VEHICULAR ACCESS, & MULTIMODAL MOBILITY

Parking Garage Access

The Preston Center parking garage is a two-level garage with multiple access points on the east and west sides of the garage. The lower level of the garage has no internal vehicle circulation and vehicles must exit the garage to access other areas of the garage as shown in the example in **Figure 2.15**. In some cases, vehicles must circle around the garage and re-enter the garage from the other side due to the one-way street configuration. This external circulation increases the risk of pedestrian/vehicle and vehicle/vehicle conflicts. (pg 21)

The parking garage study area was not observed to be congested, but it was observed to have an unnecessary number of potential pedestrian/vehicle and vehicle/vehicle conflict points. Pedestrians take the shortest path out of the garage and cross the roadways at random locations rather than being guided to a designated pedestrian crosswalk. The on-ground parking garage circulation lane has garage users entering and exiting the circulation roadway, garage users circulating, and pedestrian crossing to and from the parking garage.

Since the ground level of the garage has no internal circulation, each ingress driveway provides access to only one drive aisle. Essentially, Westchester Drive, Berkshire Lane, Luther Lane, and Kate Street provide circulation for the ground floor. This maximizes the parking provided on-site, at the cost of a significant traffic burden on these roadways as patrons circulate onto and off these roadways multiple times trying to find a space on the ground floor during busy periods. Additionally, this circulation pattern frequently results in users waiting within the garage for a space, blocking internal drive lanes, rather than exiting and returning via the roadways. (pg 22)

EXISTING TRANSIT, BICYCLE, & PEDESTRIAN FACILITIES

Transit service for the site is provided by Dallas Area Rapid Transit (DART) Bus Route 36, with a stop with a bench and no shelter on Preston Road just north of Luther Lane. Route (428) provides service off Northwest Highway west of Ames Street. The bus stop at that location consists of a sign only and no shelter. Little to no activity was observed at these bus stops.

The study area is not bicycle friendly, with no on-street bicycle lanes and very little bike parking (one bike rack between Anna's Tailors and the entrance to the Berkshire Court parking structure), within the study area or on major regional roadways such as Preston Road, Douglas Avenue or Northwest Highway.

The entire area's sidewalks and pedestrian accommodations are out of date, deteriorating and lacking comfort, creativity, or cohesion for pedestrians. Despite this, there are many pedestrians coming from the office buildings west of Douglas Avenue to have lunch or run an errand. There are no visible pedestrian amenity upgrades in the study area, such as in-pavement flashers, pedestrian signals or designated crossings, or public benches. The traffic signal at Preston Avenue/Berkshire Lane lacks pedestrian push buttons and pedestrian walk indicators. There is no accommodation for pedestrians on Northwest Highway including a lack of continuous curbing and sidewalks. (pg 24)

KEY TAKEAWAYS

- A license agreement between the City of Dallas and the Preston Center West Corporation, a group of private citizens with ownership stake in the properties surrounding the garage, dictates that the garage site must be used for public parking.

• The Preston Center West Corporation has veto power over the ultimate design selected for an updated parking garage.
• Preliminary conversations with both the City and the Corporation indicate that both have similar goals for a new parking structure, including a high level of service and a reduction in congestion on Preston Center's internal roadways.
• The overall Preston Center parking system (including publicly available on-street, surface, and structured parking) experienced peak occupancy on a weekday between 12:00 and 1:00 PM, with a total occupancy of 71%. The Preston Center Garage was 95% occupied at the peak hour.
• Current vacancy levels in the study area are between 10%-15%. Assuming 100% occupancy, recommended supply should reach 1,200 spaces to accommodate potential intensification of the sites surrounding the facility.
• Several considerations related to enforcement, management structure, and information sharing could improve the overall efficiency and cohesiveness of the Preston Center parking system as a whole.
• Several factors severely impede the ability of the Preston Center Garage to serve its patrons well, including age, circulation and access, lighting, concrete and striping conditions, and cleanliness.
• The study area is bounded and accessed by several major roadways, including Northwest Highway, Preston Road, and the Dallas North Tollway. Circulation immediately around the garage is characterized by one-way, counterclockwise, streets.
• The existing traffic patterns combined with a lack of multimodal amenities (including non-continuous and poorly maintained sidewalks) result in an unfriendly environment for pedestrians and cyclists. (pg 26)

CONCLUSION

A central recommendation of the 2016 Area Plan for the neighborhoods surrounding the Northwest Highway and Preston Road interchange developed by the North Central Texas Council of Governments (NCTCOG) was the redevelopment of the aging Preston Center Parking Garage. The redevelopment vision championed by the community included an underground parking structure with an at-grade community park on top.

While the overall Preston Center parking system (including publicly available on-street, surface, and structured parking) experienced peak occupancy on a weekday between 12:00 and 1:00 PM, with a total occupancy of 71%, the Preston Center Garage was 95% occupied at the peak hour. Although several strategies related to enforcement, management structure, and information-sharing could improve the overall efficiency and cohesiveness of the Preston Center parking system as a whole, future parking demands of the study demonstrate a need for approximately 1,200 spaces at the Preston Center Garage site. Additionally, factors such as age, circulation and access, lighting, concrete and striping conditions, and cleanliness impact the garage's ability to serve its patrons well.

Input from community members confirms the Area Plan's indication for a strong preference for a structured parking facility that serves the neighborhood's needs related green space and community in addition to storing parked vehicles, with desire to provide pedestrian and bicycle-friendly amenities in addition to a park at-grade.

A range of garage sizing options were explored for both concepts presented in this section. These sizing options were derived from a variety of sources, including quantitative analysis, community feedback, and recommendations for the Area Plan. Sizing options include 1,000 spaces, 1,200 spaces, and 1,600 spaces.

The basis for Concept 1, a 100% underground structure with an at-grade community park spanning the whole site, is the Area Plan recommendation for redevelopment of the Preston Center Parking Garage site and was identified as the "most critical element" in implementing the Preferred Vision for the study area, including an expansion of existing capacity within the garage, provided fully sub-grade, as well as an engagement of the pedestrian environment and at-grade streetscape with a community park. Concept 2 includes bifurcation of the subject site, with a portion of the site dedicated to ground-level open park space and of the other portion of the site dedicated to at- and above-grade parking with an opportunity to build additional density atop, in keeping with feedback from the community. This concept would also include sub-grade, while also honoring the community's desire for an at-grade green space or park. (pg 80)

DOWNTOWN DALLAS
City Center TIF District Parking Strategy Study
Prepared for: The City of Dallas
Prepared by: Kittelson & Associates, Inc
DRAFT
June 2001
(63 pages)

Existing Zoning: CA-1; PD No. 619, per Chapter 51A:
(i) Except as provided in this section, for all uses except single-family and duplex, off-street parking is only required for a building built after June 26, 1967, or an addition to an existing building, at a ratio of one parking space for each 2,000 square feet of floor area.
(ii) Except as provided in this section, no parking is required for ground-floor retail and personal service uses except for the following:
(aa) Alcoholic beverage establishment operating as a bar, lounge, or tavern.
(bb) Commercial amusement (inside).
(iii) No parking is required for the first 5,000 square feet of ground-floor floor area for a restaurant without drive-in or drive-through service.

Introduction
Background
A Tax Increment Financing Reinvestment Zone for downtown Dallas (City Center TIF District) was created in June 1998 to fund the development of an attractive, urban center within downtown. The boundaries of this District are shown in Figure 1. The goals for the TIF District are to help protect the major investments made in downtown Dallas and to encourage redevelopment of underutilized space within the District.

Following the TIF Board recommendation for a parking study, the Central Dallas Association (CDA) independently hired a consultant to conduct the Main/Commerce/Elm Street Parking Analysis. The study showed the need for additional parking facilities when development and/or redevelopment occurred. To expand the scope of the analysis already performed and develop an overall parking strategy for the TIF District, the City Center TIF District Parking Management Strategy study was commissioned in 1999. The emphasis of this study was to determine effective, low-cost parking solutions that increase the efficiency of the existing parking management system while facilitating and supporting planned revitalization. These solutions are to be coupled with development policies that will further support the City goals of additional in-

town housing, increased office occupancy, and the realization of a 24-hour downtown through expansion of retail that is both supportive of the District and destination-oriented. (page 5)

(pg 6)

Report Purpose

This report summarizes the work completed on the City Center TIF District Parking Strategy study. The purpose of this Summary Report is to provide sufficient information in a consolidated form to facilitate preliminary decisions by the City Council regarding the commitment of funds to parking investments in the TIF District. Implementation of initial Council decisions will be followed by management, administration, and oversight activities to ensure continual progress toward achievement of the vision and goals set forth in the City Center TIF District Parking Strategy. (pg 7)

Section 2

Objective Statement

In essence, downtown Dallas can become a more vibrant, accessible, 24-hour destination. Within this recognition is the understanding that a new paradigm for the management of the parking and transportation

system must be developed and implemented. Central to that new paradigm is the belief that the street system providing access to the downtown serves multiple purposes. No longer can the street system be managed to serve a single purpose; rather, it must be managed to provide accessibility to several desired economic uses while balancing the need for safety, mobility, reliability, and convenience. (pg 9)

Guiding Principles for Access

1. **Make the downtown accessible to all users.** Access should be provided to all users of the downtown, including transit, automobile, and bike/walk users**.** The City should strive to create and implement as many access options as possible**.** Parking management strategies and programs should support and complement all access modes.
2. **Provide the highest mix of access possible in the downtown core.** The core area of downtown should provide the highest mix of access possible to support its role as the central access point connecting all the districts of the downtown**.** Employees, customers, visitors, and residents should be provided with multiple options for moving to, through, and within the core.

Guiding Principles for Priority Parking

3. **Provide sufficient, convenient parking.** Sufficient parking should be provided to support desired economic activities in each downtown district. The most convenient parking spaces should be reserved to support customer/client/vendor/visitor access to those economic activities within each area.
4. **Provide adequate employee parking.** Adequate parking should be provided to meet employee demand, in conjunction with a transportation system that provides balanced travel mode options**.** All parking strategies should be coordinated with transportation demand management goals and objectives to ensure that commuters and customers have reasonable options available for access.
5. **Expand on-street parking wherever possible.** On-street parking should be restored along strategic corridors to improve customer/visitor accessibility and to facilitate revitalization of street-level activities**.** On-street parking and pedestrian access should, in some cases, take priority over street capacity and vehicle speeds.
6. **Promote mixed-use off-street facilities.** Off-street parking facilities should be developed to serve a mix of uses to facilitate continued access activity throughout the day and into the evenings and weekends**.** Facilities should be strategically located to assure that such a mix of parking uses (particularly customer/visitor access) is conveniently and economically served. (pg 10)

Section 3
Existing Conditions
Data Collection

The data collection effort in this study included an extensive effort to determine the current parking and transportation conditions in the TIF District. Parking data were collected in September of 1999 on a typical day in downtown Dallas. This “typical day” was identified based on discussion with City staff, the CDA, and members of the business community. To ensure consistency between the days, aerial photography was used to identify any changes in system utilization. Data collection for transportation and traffic conditions was largely an effort of summarizing the City’s available data. Parking demand data were collected during essential hours of the day across the entire parking supply that was accessible. These time periods included the early morning hours (6:00 to 10:00 a.m.), the midday hours (11:30 a.m. to 1:30 p.m.), the late afternoon hours (3:00 to 6:00 p.m.), and the evening hours (7:00 to 9:00 p.m.). (pg 13)

Parking Conditions

The TIF District has been subdivided into six sectors to provide more refined analysis of parking conditions. These sectors, shown in Figure 2, are defined by their existing land uses, the types of parking facilities, and the special relationship of parking facilities to development. Analysis and presentation of parking supply and demand data at the sector-level also ensures that the data provided by the parking operators are held in confidence.

Methodology

Existing parking conditions within the TIF District were analyzed using a two-step process: data collection and demand analysis. Data collection included an inventory of parking facilities and survey of parking demand. Analysis of the demand data focused on the weekday peak hour for demand (11:30 a.m. to 12:30 p.m.), in recognition that a system that accommodates the peak hour will adequately serve virtually all normal circumstances (with special events and the holiday seasons being extraordinary).

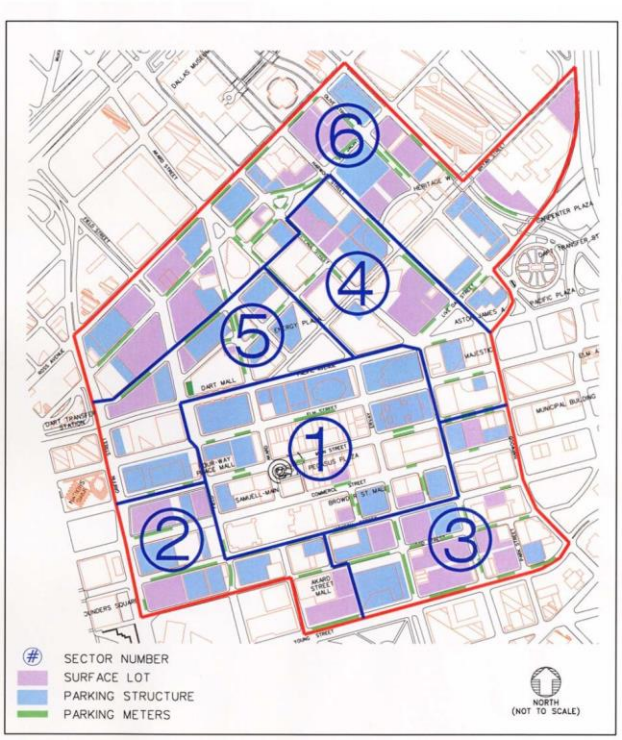
Parking Supply

The TIF District contains over 29,750 parking spaces. This supply comprises approximately 550 on-street spaces, approximately 4,750 surface lot spaces, and approximately 24,450 structured spaces. An overview of parking utilization in the District is presented in this section, and Figure 3 locates the types of parking facilities found in the TIF District. A detailed summary of the existing parking utilization by sector will be provided under separate cover. The amount of parking that is under private control is approximately 29,020 spaces, including all 4,750 surface lot spaces and approximately 24,270 structured spaces. Well over 17,000 of the structured spaces are known to be accessory to specific office development within the District.

There are only 730 parking spaces within the TIF District that are under public control, owned by City of Dallas. (The City owns two garages outside the District that are potentially available for remote parking.) The 550 on-street, general-purpose spaces are controlled primarily by parking meters. The remaining 180 spaces are located in an underground facility associated with the library. The on-street supply represents approximately 1.8 percent of the total parking supply within the TIF District (a very low percentage in comparison with other metropolitan areas). The majority of meters allow two-hour time stays, with the standard meter rate throughout the TIF District being $1.00 per hour ($0.25 every 15 minutes).

The City currently restricts access to a significant portion of the on-street parking supply during specific times of the day to accommodate inbound and outbound commuter peak hour vehicular traffic. Time-of-day restrictions reduce the number of available spaces by 322 during the a.m. period (59 percent) and by 345 during the p.m. period (63 percent) commuter peak periods. (pg 15)

Figure 3 Parking Facilities



(pg 17)

Additional City Parking Supply

The City owns additional parking facilities in the form of parking garages, located in the downtown area, but outside the City Center TIF District. The Reunion Arena and Arts District garages are currently underutilized and provide opportunities for inclusion in specific management strategies to increase the utilization and potentially serve City Center TIF District parking needs. (pg 18)

Parking Demand

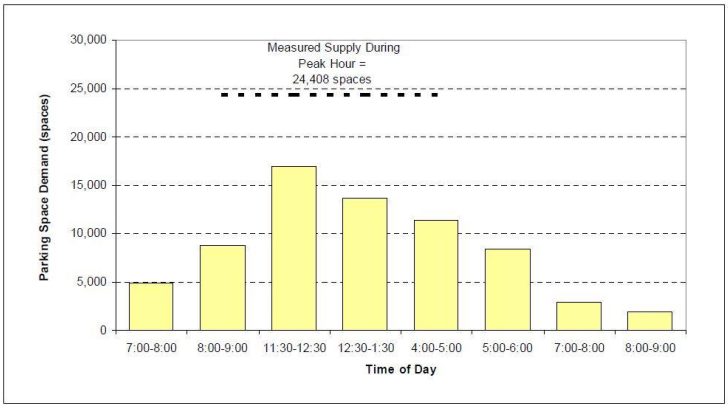


Figure 4 Measured Parking Demand Profile

(pg 18)

The District-wide peak-hour occupancy, shown in Figure 5, is approximately 70 percent, leaving approximately 9,225 spaces vacant. Approximately 72 percent of these vacant spaces (or 6,650 spaces) are located in garages and underground facilities that are dedicated to serve office developments and are unavailable for general use, due to the way the supply is accessed and managed. This leaves approximately 2,575 of the vacant spaces during the typical weekday peak hour available to serve general-use parking demand. (pg 18)

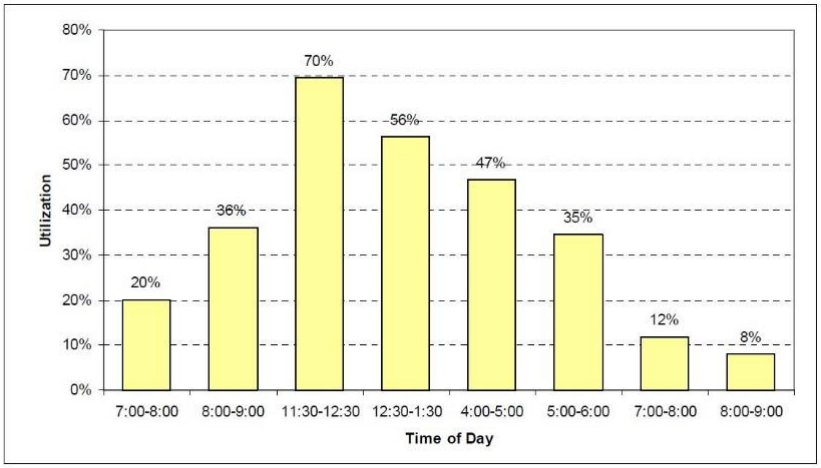


Figure 5 District-wide Weekday Total Parking Utilization

(pg 19)

On-street occupancy across the District, shown in Figure 6, is 65 percent during the parking demand peak hour, leaving approximately 190 spaces vacant. Approximately 25 percent of the occupied, on-street spaces (nearly 90 vehicles) are estimated by City staff to be utilized by vehicles with an Accessible Parking Permit. Such permits allow use of the metered stall all day and at no cost. Abuse of these permits is suspected and the adverse impact to overall on-street parking availability is significant.

As shown in Figure 7, approximately 82 percent of the 4,750 parking spaces in surface lots are utilized during the peak hour. This utilization leaves approximately 860 vacant parking spaces. Surface lot utilization is the highest of the three parking facility types reported. Peak hour demand was measured for approximately 19,100 of the 24,450 parking garage spaces in the TIF District. Utilization of this measured supply is 67 percent, as shown in Figure 7. If the utilization of the measured garage spaces in each sector is assumed for the garages where demand data were not available, an estimated 8,175 garage spaces in the TIF District are vacant. (pg 19)

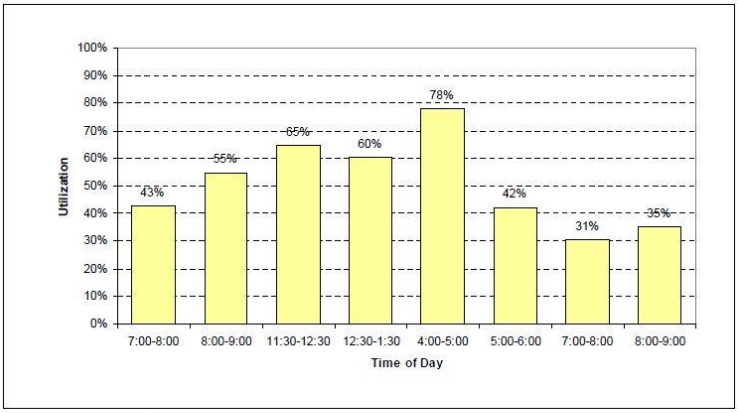


Figure 6 District-wide Weekday On-street Parking Utilization

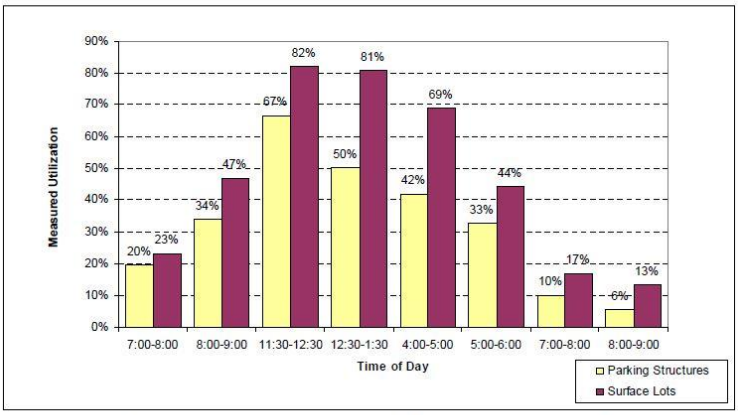


Figure 7 Measured District-wide Off-street Parking Utilization

(pg 20)

Effective Capacity - Rule of 85 Percent

Table 2 provides a summary of effective parking use rates and employment densities across the TIF District and within the denser downtown core. A unique factor identified in the land use analysis is the current employment density. While most major urban areas of the country experience densities in the range of 3.0 to 4.0 employees per 1,000 square feet of occupied space, the employment density rate in the TIF District is only 1.77 employees per 1,000 square feet. This would explain the equally low parking demand rate of 0.95 spaces per 1,000 square feet of leased space, found in the District. Other major cities with dense urban cores experience rates between 1.0 and 2.25 spaces per 1,000 square feet. (pg 23)

Table 2
Parking Rates & Employment Densities

	Total Parking Demand	Occupied Space (ksf)	Parking Rate (spaces/ksf)	Employment Density
Downtown Core	4,410	7,860	0.56	2.06
TIF District	20,525	21,600	0.95	1.77

(pg 23)

Section 4
Future Conditions
Introduction

The purpose of examining future conditions is to determine the demand for parking, the adequacy of existing supplies to meet those demands, and the opportunities to create additional supply, as necessary. Future parking demand comprises current uses expected to continue, evolving uses of the same occupied space, and new uses that either reoccupy vacant buildings or are built.

A significant portion of the parking supply is transitory, being located in surface lots, which do not realize the highest and best use of the land. Therefore, it is expected that future growth may be accommodated at the expense of these surface parking lots. This could mean the net loss of parking for the District, which would adversely impact the economic viability of the area.

Predicting what form of development will occur in the future, where it will be located, and the amount of parking it will need remains a speculative endeavor. The value gained from framing the future condition is in understanding the commitments necessary to succeed with the vision that has been defined. The result is an understanding of the effective parking management strategies necessary to improve parking system efficiency and the scale of future parking infrastructure needs that would likely result from successful economic development. (pg 26)

Determining Parking Ratios to be used to estimate Future Parking Demand in the City Center TIF District

The ratios associated with data specific to Dallas are most likely to reflect future parking needs by land use category since it is specific to the environment, employment density, and mix of uses found within the TIF District. The ULI rate for retail was used because of an inability to isolate the retail parking demand in Dallas. The combined use of these rates is considered to be reasonable for the purpose of estimating future demand. Application of the 15 percent buffer to the base rates is necessary to ensure future supply adequacy over time and allows the 85 Percent Rule to be applied to public parking.

The Zoning Ordinance for the Dallas Central Business District sets a minimum amount of parking to be provided in new developments (1 space per 2,000 square feet of development - regardless of land use category). There is no additional parking requirement related to the conversion of existing buildings for new uses. This analysis of parking generation ratios is for projection purposes only. This study does not recommend that the Zoning Ordinance be modified to set a limit on the maximum amount of parking that will be allowed in a new development or redevelopment project. It is assumed that the functioning of the private market will insure that the parking provided privately for office and residential developments will be efficient. (pg 28)

The public portion of the projected parking demand includes only the retail category. This analysis assumes that the private sector will provide adequate parking to meet office and residential needs in the City Center TIF District. The City enables the private sector to provide accessory parking with office and residential developments, in response to the demands of the marketplace. This position by the City provides the assurance that economic development opportunities will not be hampered due to parking policy. Some developers may find that parking ratios as high as the ULI rates (or even higher) are necessary to facilitate a project. Others may be able to support a project with parking ratios lower than the existing ratios. Monitoring the parking system and updating the parking use ratios by land use type will enable the City to

track the evolution of these rates and adjust the implementation of the overall Parking Strategy accordingly. (pg 29-30)

Potential Utilization of the Existing Parking Supply

Due to the access constraints of the existing, vacant parking supply, it is unlikely that significant amounts of retail absorption or new residential development could be achieved, beyond the office absorption. Therefore, a change in parking management and/or an increase in the parking supply is necessary to achieve the retail and residential components of the 15-year development scenario. Due to the access constraints of the existing, vacant parking supply, it is unlikely that significant amounts of retail absorption or new residential development could be achieved, beyond the office absorption. Therefore, a change in parking management and/or an increase in the parking supply is necessary to achieve the retail and residential components of the 15-year development scenario. (pg 30)

Future Parking Supply Needs

Future Office Parking Supply Needs

Results of the parking demand forecast and analysis of existing parking vacancies to accommodate the forecast reveal that office absorption can be partially accommodated within the available supply. Therefore, building owners and managers should continue to control current supplies to facilitate this office absorption. In addition, owners and managers should aggressively pursue policies that would attrition out dedicated/reserved stalls in leases to tenants. This will provide for greater flexibility in the management of the office development parking system and facilitate more efficient use of existing supplies. (pg 30)

Future Residential Parking Supply Needs

New residential development will likely need to be accommodated through development of new parking supplies or the conversion of existing supplies to serve these needs. Conversion of existing supplies would either impact the 15 percent buffer (also potentially impacted by office absorption) or force office-related spillover parking to occur outside the TIF District boundary. Neither scenario is desired; however, it may be determined that directed spillover achieves a higher and better use of land and infrastructure and is, therefore, acceptable. (pg 31)

Future Retail Parking Supply Needs

Absorption of vacant retail space is likely not possible without expansion of the general use public parking supply within the TIF District. The estimated need for 800 stalls is considered to be conservatively low and assumes a strong land use interaction resulting in lower auto demand on the street and associated parking demand. Spaces for this use could be created from the existing supply, but would require the displacement of office/employee parking to locations outside the District. This supply need could not be accommodated by the 15 percent buffer because the intended purpose of this buffer is to accommodate the demand variability created by customers and visitors, largely associated with retail development.

It is likely that TIF funds could be applied to the development of new public parking supply dedicated to support retail development. Logically, this supply would be managed to provide general use access and therefore satisfy the “public good” intent of the TIF law. The economic development and downtown revitalization benefits of such an investment are significant and would be readily realized in the early years of infrastructures’ existence. (pg 31)

Application to City Code
Dallas' historical parking codes have created a parking supply for office development that closely matches the measured parking demand for office developments within the TIF District. The current office-built ratio for parking is approximately 1.11 spaces per 1,000 square feet of development, averaged across the entire TIF District. By contrast, the current office demand ratio is approximately 1.06 spaces per 1,000 square feet of occupied development. The office demand ratio was determined by comparing the measured demand in accessory parking facilities to the occupied space within buildings they are specifically targeted to serve.

Although data are not available for parking supply and demand immediately outside the TIF District boundary, anecdotal information strongly suggests that there is a significant net spillover of office parking demand outside the TIF District. One noted example of this is the heavy reliance of both the Bank One Tower and 1700 Pacific office towers to accommodate employee parking in the Elm Street parking garage, located immediately outside the TIF District. If this were borne out through further data collection and analysis, the likely conclusion would be that a parking code rate greater than 1.0 spaces per 1,000 square feet of office development may be appropriate.

Constraints on the provision of parking for employee use become a supporting strategy for transit and transportation demand management. Dallas' existing commute transit mode split of approximately 30 percent (according to DART sources) is very good when compared to other urban areas. This is evidence of the relationship between quality transit service and a constrained central business district parking environment. The Guiding Principles support the acknowledgement and advancement of this relationship.

It is strongly recommended that the Guiding Principles contained in this document be adopted as a policy element within the City's parking code. These principles will give guidance and direction in the implementation of the code for future development. Greater attention in the code should also be given to standardizing appearance requirements for existing and future surface parking. This would include more aggressive landscaping and lighting standards as a means to support an improved pedestrian environment. (pg 46)

Downtown Dallas 21st Century Strategic Parking Plan

Prepared for: Downtown Dallas inc; Moore Iacofano Goltsman
Prepared by: Kimley-Horn and Associates Inc
January 2011
(100 pages)
http://www3.dallascityhall.com/committee_briefings/briefings0611/TEC_DowntownDallasParkingStrategicPlan_061311.pdf

Introduction - Parking Strategic Plan Overview
DEFINING CHARACTERISTICS
Around the country parking management programs are being elevated to new levels of success and performance. These programs are guided by a new strategic approach to parking management. This parking strategic plan captures this new approach and has been developed to be one of the five key transformative strategies of the Dallas 360 Downtown Master Plan.

The defining characteristics of the parking management strategic plan are:

- The development of a "vertically integrated" parking management organization.
- A focus on improving customer service and creating new standards of parking facility safety, maintenance, and ease of use.
- A comprehensive and integrated approach to both parking and transportation issues.
- An alignment and integration of parking philosophy and programs with larger community strategic goals.
- Leveraging new technological advances.
- Creating a defined parking investment strategy as an element of the larger downtown economic development strategy.
- Promoting a new generation of parking facility designs and integrated mixed-use facilities.
- Actively promoting new sustainable design and management principles. (pg 7)

A few of the key recommendations related to these core strategies are summarized below:

Enhanced Planning, Urban Design and Community Reinvestment

1. Use parking garage design to support and emphasize good mixed-use development.
2. Identify potential parking development locations with the greatest benefit to existing and future demands.
3. Develop new parking facility design guidelines.
4. Create a parking development policy and program (linked to the downtown economic development plan).
5. Use good urban design principles to maximize the "value" of parking and to enhance the "urban form".
6. Adopt and promote "Green Parking Design" principles.
7. Reinvest a portion of parking program revenues back into the districts in which they were generated on an annual basis. (pg 8)

In Summary…

Placing more focus and investment in parking will provide significant community dividends, if done well. Parking affects downtown visitors, employees, residents and businesses in very direct and tangible ways. Improvements to public parking programs are noticeable and important. It is important that the public sector not ignore parking and relegate it as a purely private sector issue. On the contrary, we challenge the City to not only be involved, but to set a high community standard when it comes to managing this important community asset. (page 9) (…)

Executive Summary

REFORM THE APPROACH TO PARKING

Key Issues and Opportunities

As part of the Parking Strategic Plan, a Parking Steering Committee and other stakeholder groups provided specific direction on the particular issues and opportunities facing Downtown Dallas with respect to parking. A core challenge facing Downtown Dallas today is that parking is a necessary but often undesirable part of the Downtown experience for many visitors, workers and residents. Like several other large American cities, Dallas has largely relied upon the private sector to build parking supply in compliance with minimum parking requirements. As a result, the public parking program is organizationally fragmented and does not address parking in a comprehensive manner. For example, with the exception of on-street parking, the City does not own or control any significant parking assets. Visitors are often forced to search for a new parking location during each visit to Downtown's many destinations – since there are few "known commodities" of

where to park in a convenient, predictable and enjoyable way – which increases the likelihood of a negative experience. (pg 11)

Parking policies and programs are not developed or aligned with larger community strategic goals and are managed as a separate and isolated function as opposed to an integral component of a larger transportation system. This has created departments and policies that sometimes work at cross purposes. The lack of strong public parking management limits the City's ability to ensure economic competitiveness through efforts such as providing retail support parking, influencing the parking market, and promoting adaptive in-fill and reuse of existing buildings through the strategic investment in public parking. Further, limited public parking has prohibited Dallas from strategically reinvesting parking revenues to enhance the parking experience or contribute to other community desired goals such as public art, support of transportation alternatives, specific district enhancements, and bike share programs. Finally, the lack of investment in modern parking technologies prevents Downtown from improving customer service, providing a greater range of payment options, allowing for creative pricing and enforcing options, and improving operational efficiency. (pg 11)

Planning Context

Center City TIF District Parking Strategy – this study was conducted in 2001 to evaluate existing parking conditions and potential effective low-cost parking solutions within the Center City district. The study was in response to growing concern in the late 1990's that the Main Street District would not be able to support expanded retail and residential development without more centralized public parking. The study found that even thought there was available parking, the location and accessibility of parking was not adequate. The overarching study recommendations included:

- Establishing an organization to manage parking
- Maximizing on-street parking capacity
- Dedicating parking revenue for system sustainability
- Acquiring or leasing approximately 250 short-term public parking spaces in the downtown core
- Expand short-term public parking supply when retail attracted to downtown and/or existing parking utilization reaches 85% of capacity
- Provide collateral support for parking – wayfinding/signage, site upgrades, new equipment, marketing and customer outreach
- Balance provision of on-street parking with traffic access
- Calm traffic on Elm, Main, and Commerce to support pedestrian usage
- Establish a free transit zone in the downtown core

Arts District Parking Study – this study was conducted in conjunction with the Arts District Strategic Plan. The study analyzed parking demands generated by various event venues (existing and proposed). Collected parking occupancy counts showed that 62 percent of capacity was utilized on an average weekday. Parking inventory counts in the area showed that there were 3,500 existing spaces. Available development plans showed that an additional 1,500 spaces were proposed in conjunction with new projects (most spaces found in DCPA garage and One Arts Plaza garage). Event projections show that future event demands will utilize all of the available future supply; however, with the addition of the proposed Artists Square, parking deficits grow much larger when concurrent events occur (although, the likelihood of concurrent events is small). (pg 15)

The following studies were used as a base for this study:

- Central Business District Transportation Plan

- Downtown Dallas Transit Study
- DART 2030 Plan
- Project Pegasus
- Woodall Rogers Freeway Master Plans
- Streetcar Alignment and Studies

This parking analysis was also intended to align directly with ongoing community and economic development policies. This study was crafted linear to the ongoing Dallas 360 Implementation Study, but is also cognizant of other planning efforts and guiding principles developed throughout the years in downtown Dallas, including:

- Arts District Master Plan
- Main Street Retail Action Plan
- Retail Recruitment Strategies
- Trinity River Corridor
- Farmers Market Master Plan

Study Area

The Downtown Dallas Parking Strategic Plan evaluated parking conditions "Inside the Loop", which represents the core of the Downtown Dallas area. The official boundaries of this study area are the Woodall Rogers Freeway to the north, Stemmons Freeway to the west, R L Thornton Freeway to the south, and the North Central Expressway to the east.

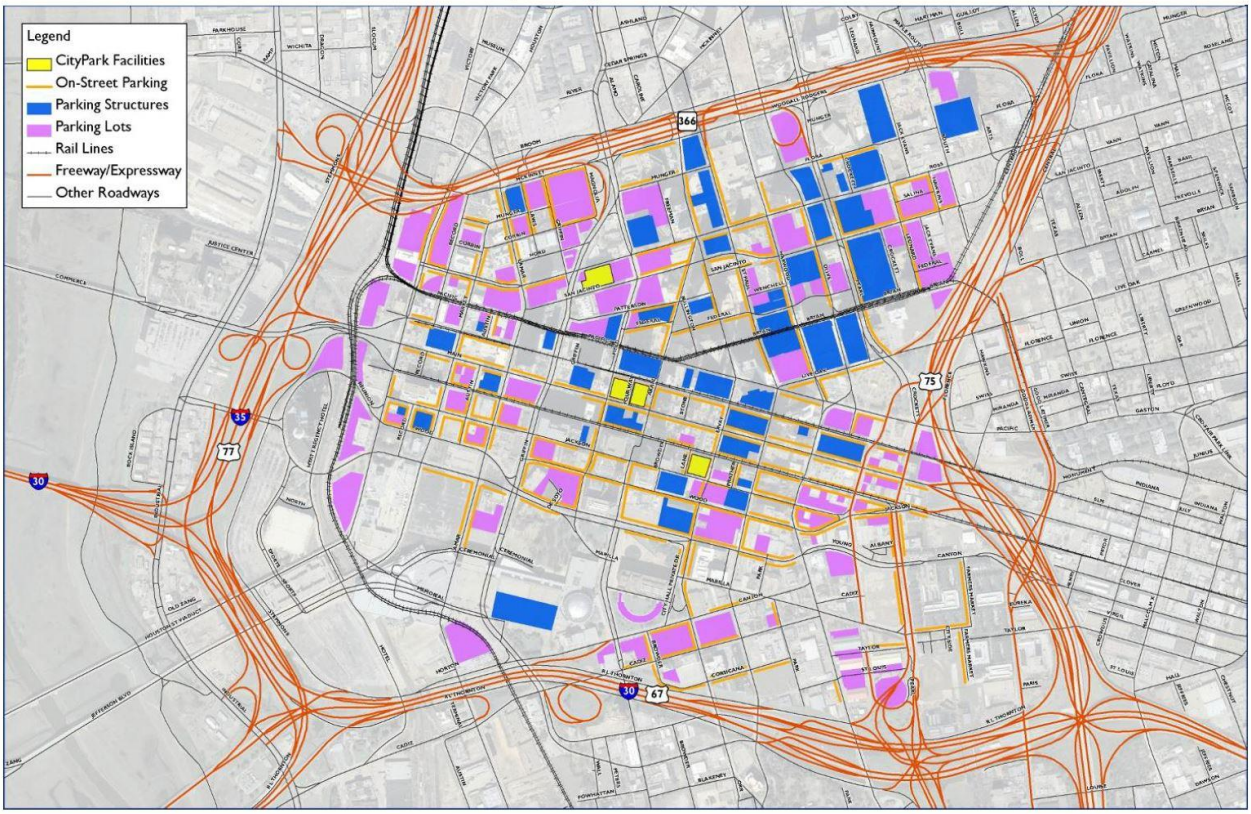
This study area represents the Central Business District for the City of Dallas. The area is 1.4 square miles in area with an approximate population of around 10,000 residents and more than 135,000 downtown employees in the numerous office towers. The CBD is the largest employment center in North Texas, representing 20 percent of Dallas's employment base.

The area represents more than 200 city blocks, with land uses varying office towers, residential units, boutique retail, and upscale restaurants. The entire area is served by a grid network of city streets, the surrounding freeway system, and DART light rail transit, which has multiple stops within the Downtown, and connects the area to surrounding districts and the Dallas suburbs. (pg 23)

Existing Parking

Based on field observations and best available data, there are nearly 70,000 parking spaces in downtown Dallas. Of this total, nearly 50,000 spaces are found in parking structures, either above or below ground. While most of the underground garage parking is typically attributed to the office uses in downtown Dallas, between half and two-thirds of the parking is available to the public in some form (transient, monthly, or valet).

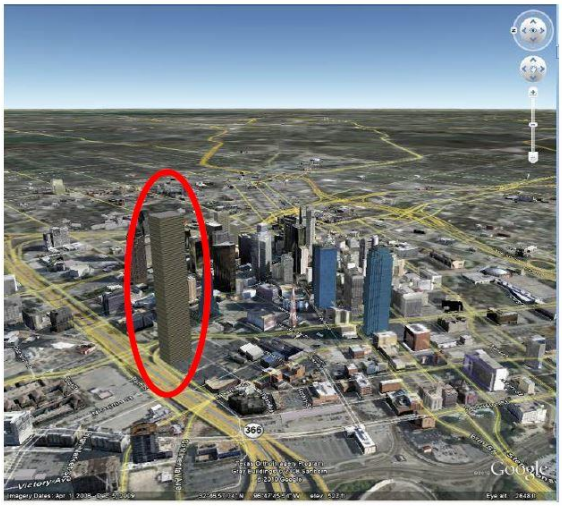
Existing Parking in Downtown Dallas



(pg 24)

The total land area within the downtown loop is approximately 955 acres. The total amount of that land currently dedicated to parking is approximately 257 acres or 27%. Of the total land area dedicated to parking, approximately 125 acres (13%) is currently utilized by surface parking. Structured parking accounts for approximately 132 acres (14%). (pg 24)

Another way of illustrating the dominance of parking as a land use is to imagine combining all the parking into a single parking structure. The diagrams below illustrate what the surface parking supply and the structured parking supply would look like if they were consolidated into parking structures with equal footprints (approximately 42,000 square foot areas). The surface parking capacity, representing approximately 16,000 spaces would require a parking structure that is 110 stories tall. For the structured parking, which includes approximately 50,000 spaces, the required structure would be 360 stories tall. (pg 25)



Surface parking consolidated into a single parking facility (110 stories tall)

Surface parking (110 stories) compared to Structured parking (360 stories)

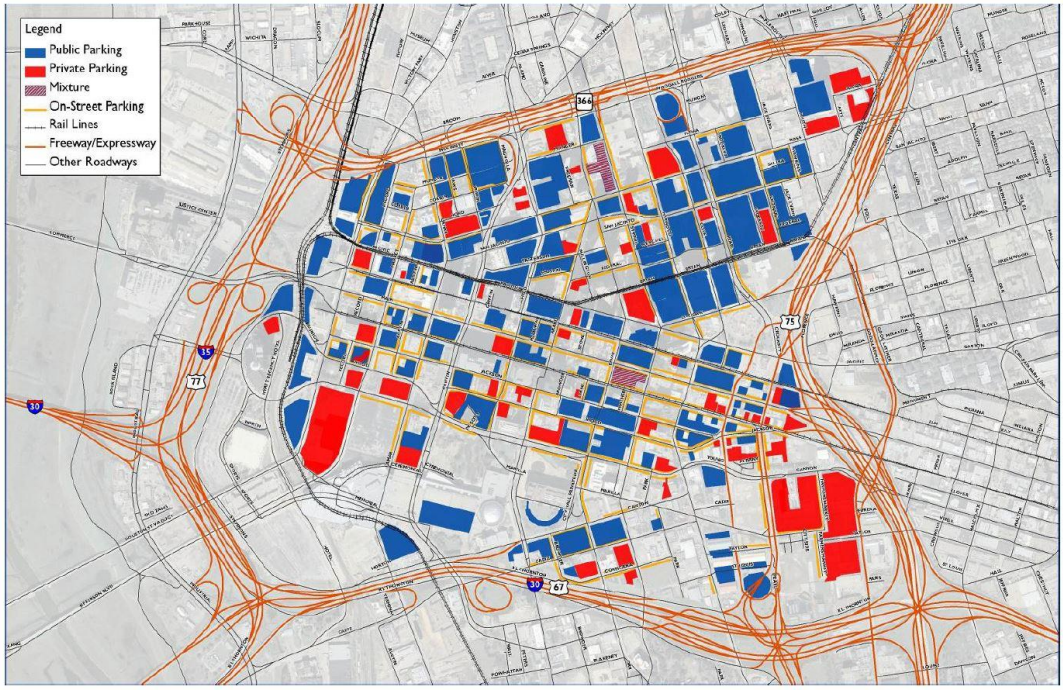
(pg 25)

Public vs. Private Parking

Of the nearly 70,000 parking spaces in downtown, almost 50,000 of those are available to the public in some fashion (whether through monthly permitting, transient parking, or valet). Publicly available parking represents approximately 70 percent of the parking supply in downtown Dallas.

Approximately 16,000 of the total spaces are available in the numerous surface parking lots found throughout town. Nearly 90 percent of this supply is available to the public, albeit through primarily private vendors. There are also approximately 2,000 on-street spaces throughout the study area. These spaces are available to anyone and vary in cost between free and $1.50 per hour (based on location). (pg 25)

Public vs. Private Parking Supply



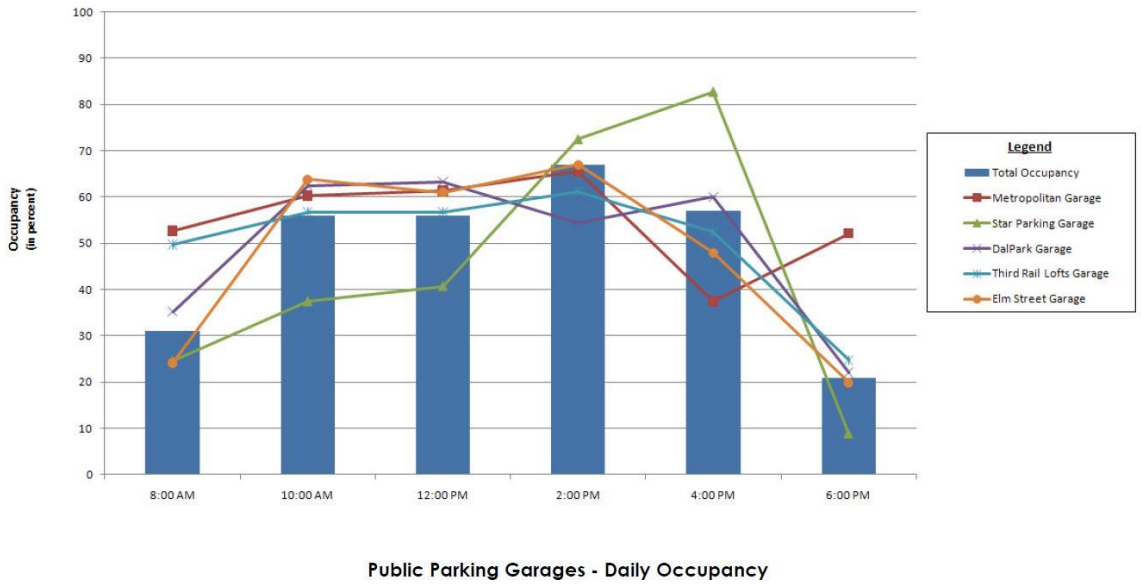
(pg 26)

Parking Occupancy

An occupancy data sample was collected from five Downtown Dallas parking structures, including the four designated CityPark facilities. The structures are located across the central portion of the downtown study area, which provides a more even distribution of the sample area. The five analyzed garages includes:

- Metropolitan Garage – 1310 Elm Street (Total Number of Available Spaces 600)
- Star Parking Garage – 1200 Ross Avenue (Total Spaces - 1300)
- DalPark Garage – 1600 Commerce Street (Total Spaces - 485)
- Third Rail Lofts Garage – 1400 Block of Elm Street (Total Spaces - 400)
- Elm Street Garage – 2000 Elm Street (Total Spaces - 2266) (pg 26)

Occupancy counts were taken mid-week to avoid variance due to external factors such as holiday travel, special events, company furloughs or heavy construction. The garage occupancy was recorded every two hours beginning at 8:00 a.m. until 6:00 p.m. The results are presented in the figure below.



Public Parking Garages - Daily Occupancy

(pg 27)

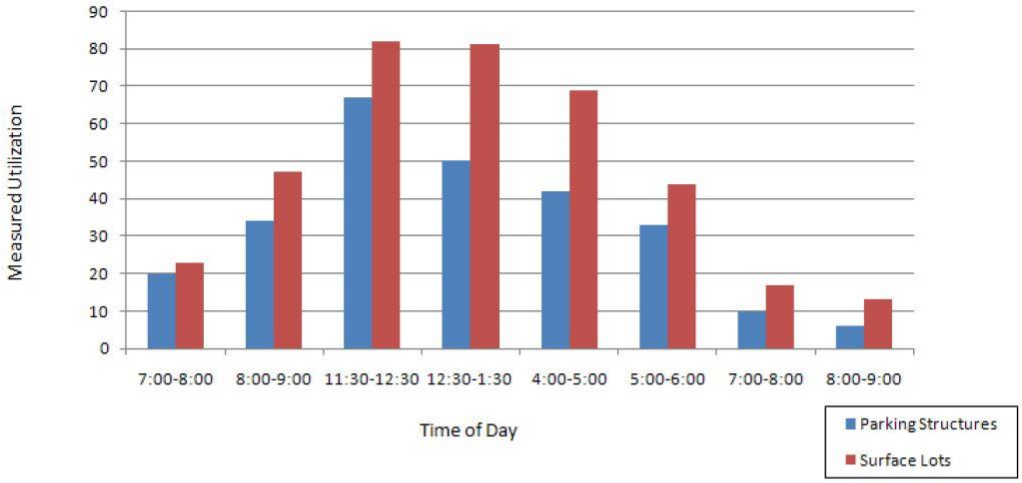
Percent of Spaces Occupied By Garage

	Metropolitan Garage	Star Parking Garage	DalPark Garage	Third Rail Lofts Garage	Elm Street Garage
	600	1300	485	400	2266
8:00 AM	53%	25%	35%	50%	24%
10:00 AM	60%	37%	62%	57%	64%
12:00 PM	61%	41%	63%	57%	61%
2:00 PM	66%	72%	54%	61%	67%
4:00 PM	38%	83%	60%	53%	48%
6:00 PM	52%	9%	22%	25%	20%

(pg 27)

The percent of occupied parking structure spaces is consistent with previous studies performed for the Downtown Dallas area. Previous studies showed a wide discrepancy of occupancy between surface and parking structures. Surface parking lots consistently achieved an occupancy level over 80% while average occupancy in parking structures scarcely exceeded 70% at any given time period. (pg 28)

Measured District Wide Off-Street Parking (*Kittleson and Associates, Inc 2001*)



Weekday Parking Occupancy (Wed. Jan. 31, 2007) (*Arts District Study - Carl Walker, 2007*)

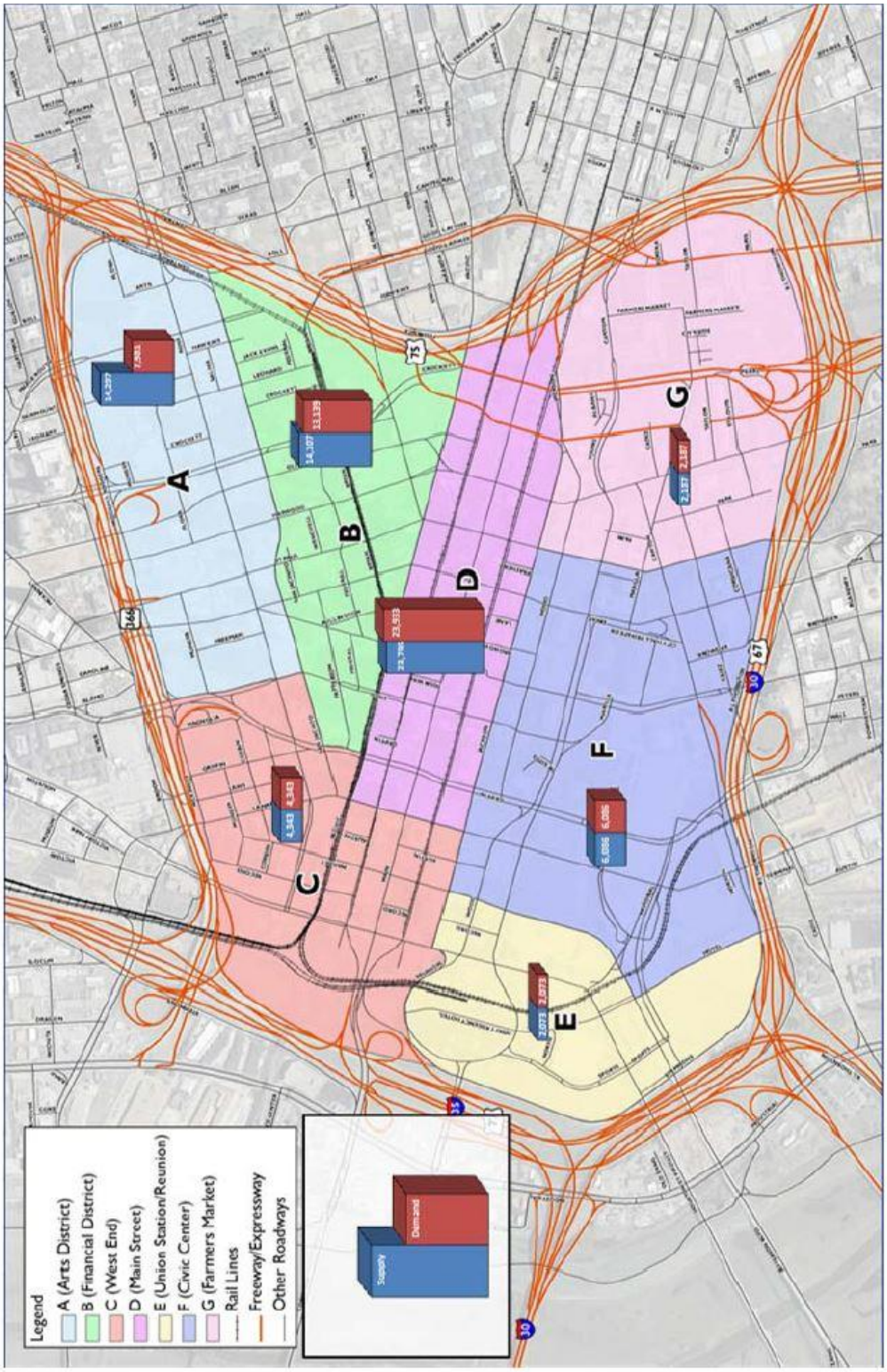
Parking Facility	No. of Spaces	Occupied Spaces	Percent Occupied
Lot 19 (Woodall & Olive)	270	266	98.5%
Lot 20 (Olive & Flora)	160	122	76.3%
Dallas Museum of Arts Garage	415	330	79.5%
Dallas Museum of Arts Surface Lot	27	22	81.5%
Southwestern Plaza Garage	400	318	79.5%
2001 Ross Avenue Garage	1,183	760	64.2%
Belo Mansion Garage	265	90	34.0%
2100 Ross Avenue Garage	451	356	78.9%
Lot 26 (Ross, Olive & Harwood)	325	290	89.2%
Lot 27 (St. Paul, Ross, Harwood)*	41	36	87.8%
First Baptist Church Garage	1,201	848	70.6%
On-Street	137	26	19.0%
Total	**4,875**	**3,464**	**71.1%**

* Parking capacity does not include 750 St. Paul Street Garage

(pg 28)

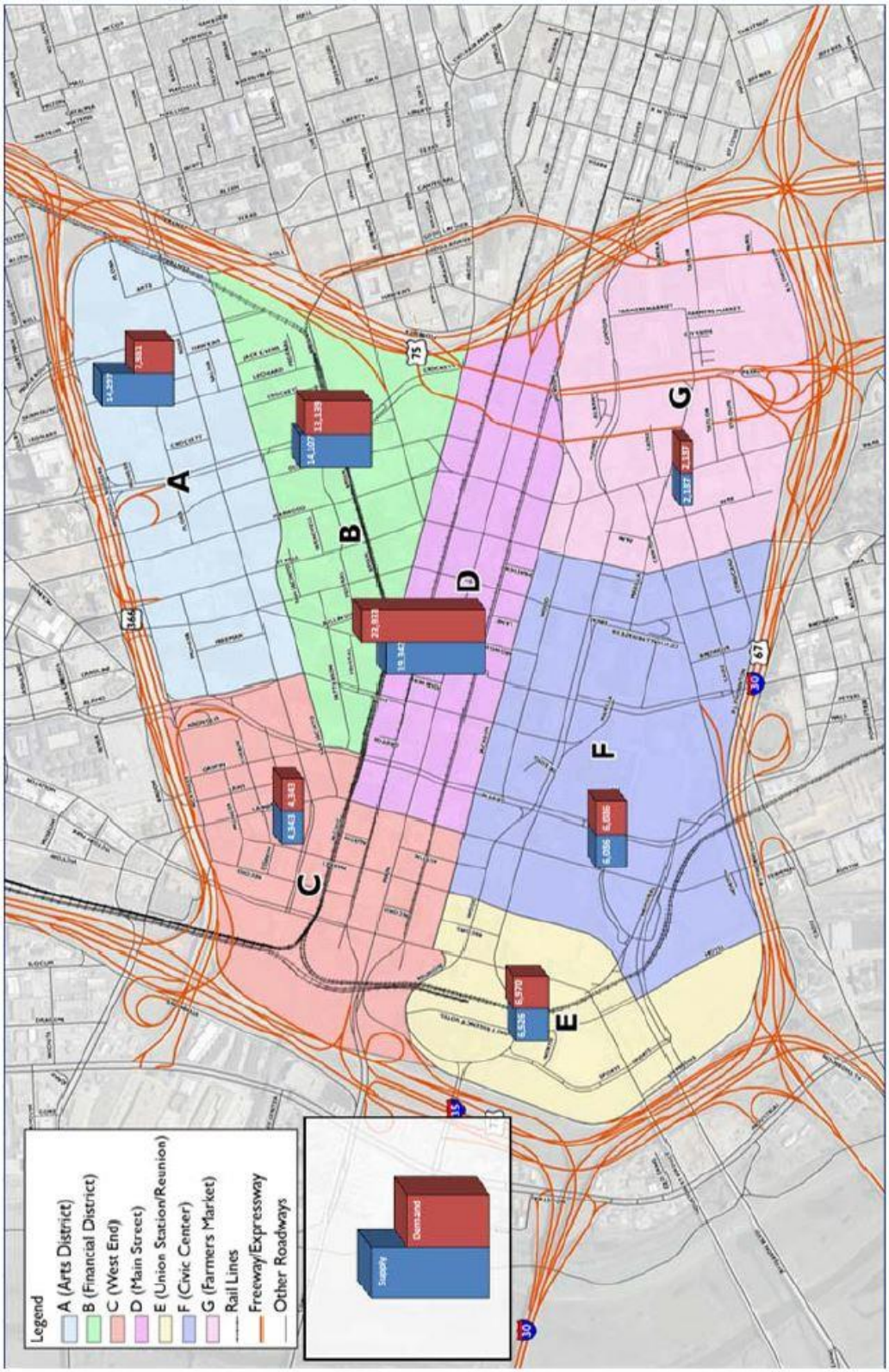
Parking Analysis Zones

For the purposes of the Downtown Dallas Parking Strategic Plan, the demand model was built using 2010 land use characteristics taken from the Dallas Central Appraisal District (www.dallascad.org). The parking supply was obtained from several sources, including field investigation, local parking operators, and local property managers. Multi-modal data was obtained from the 2008-2009 American Community Survey and recent transportation studies for the downtown area. (pg 32)



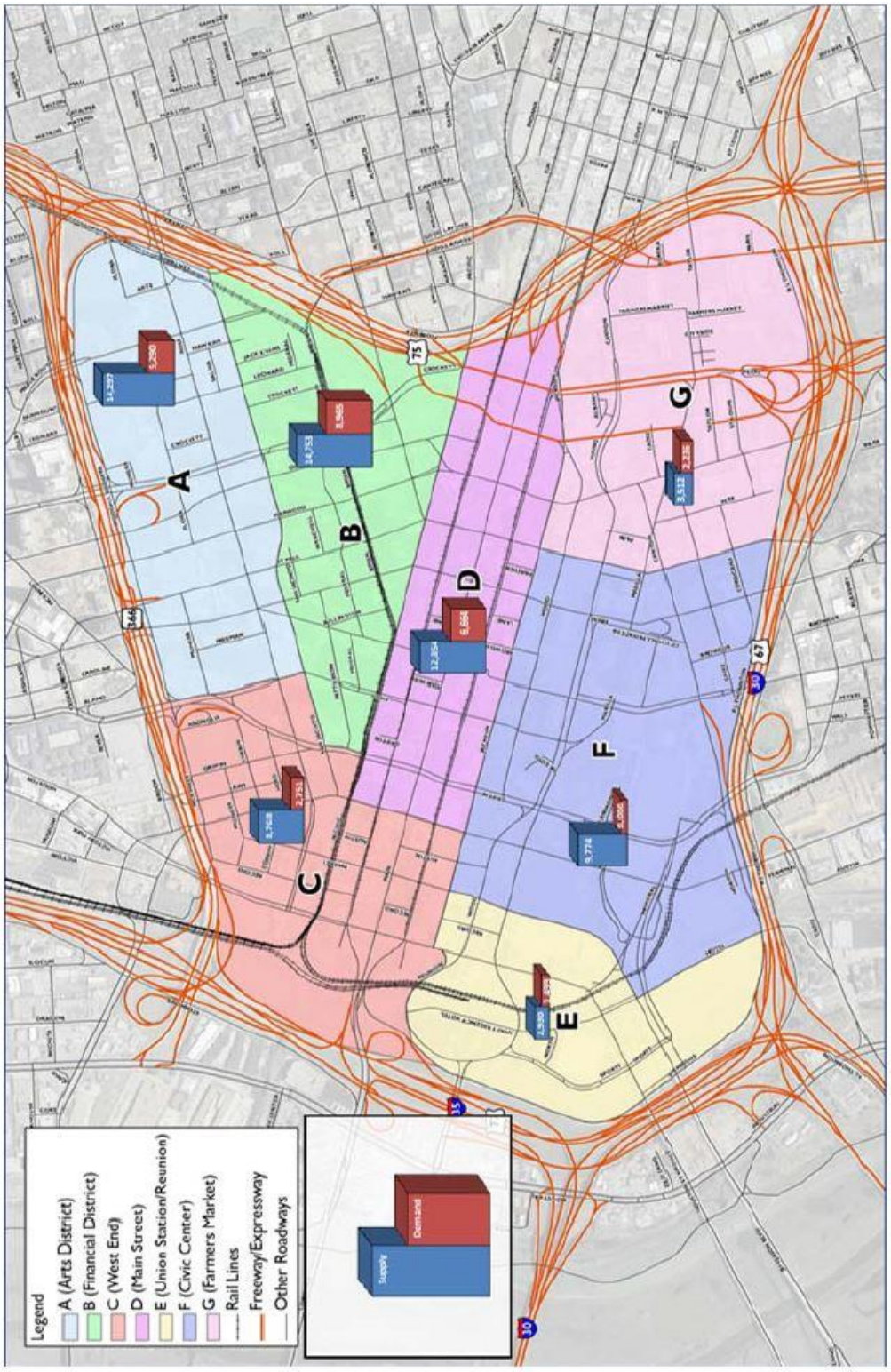
Kimley-Horn and Associates, Inc.

(pg 33)



Kimley-Horn and Associates, Inc.

(pg 34)



Kimley-Horn and Associates, Inc.

(pg 35)

Parking Issues

Through the existing parking analysis and the development of the parking demand model, several themes emerged that helped us better understand the exact parking problem (or perception of parking problems) throughout the Downtown Dallas area. The true problem with the parking system is not an issue of availability or demand. Rather, the parking problem is one of accessibility, caused by the following factors:

- Lack of way finding to available parking
- Lack of consistency in public parking
- Lack of public parking in the demand areas

These problems create the real perception of a parking deficiency, especially in areas like the Main Street district, where demand for parking (caused by a large presence of high volume destinations, or trip generators) exceeds the actual "available" supply. That's not to say there isn't parking near the destination, it just may not be visible or the most desirable parking location. (pg 36)

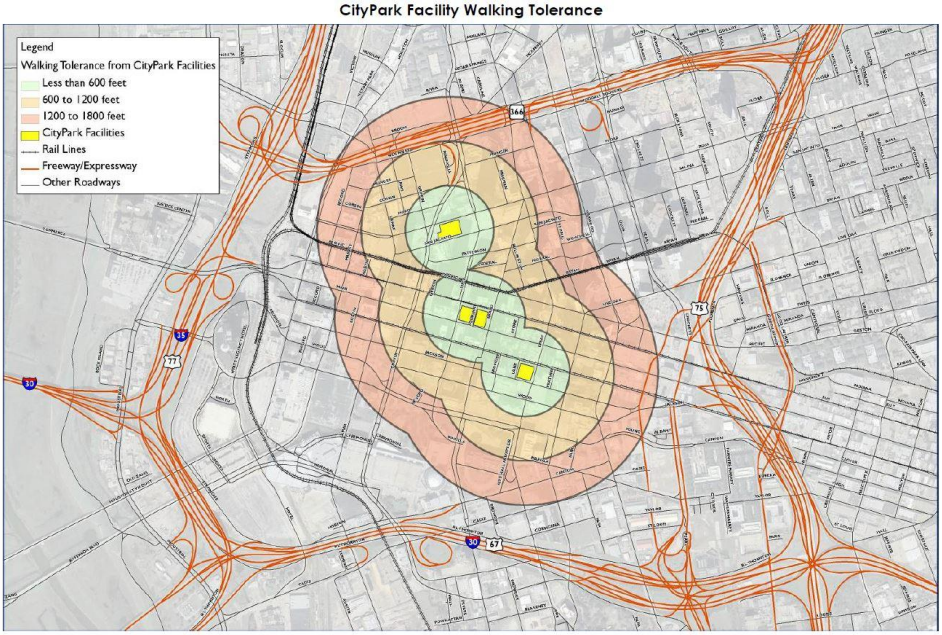
Public Parking Consistency

The lack of consistency with the public parking supply is very similar to the way-finding issue. While there are nearly 50,000 spaces that are available to the public in some fashion, all of these are provided by private operators with no clear and consistent signage indicating public parking. There isn't even consistent signage between facilities managed by the same operator. While there are no true publicly owned facilities, there are four parking garages that are considered to be part of the CityPark parking system:

- Star Parking Garage – 1200 Ross Avenue, approximately 1300 parking spaces
- DalPark Garage – 1600 Commerce Street, approximately 485 parking spaces
- Metropolitan Garage – 1310 Elm Street, approximately 600 parking spaces (pg 36)
- Third Rail Lofts Garage – 1400 Block of Elm Street, approximately 370 parking spaces

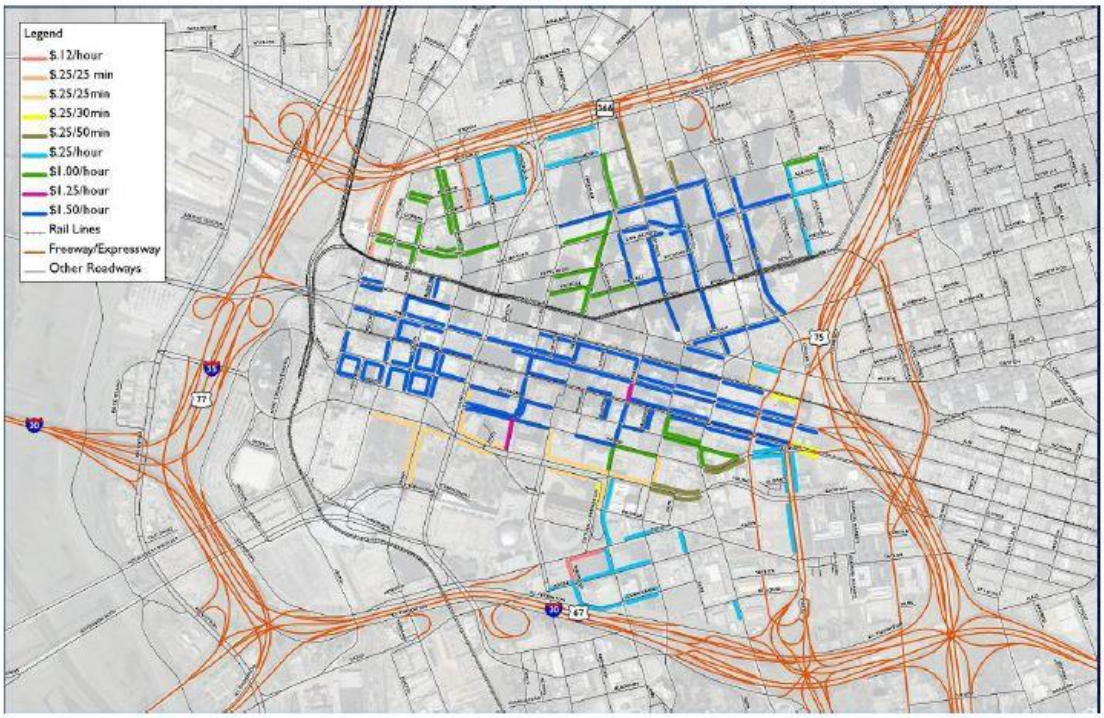
These four garages have a total of 2,755 spaces, which is approximately 5½ percent of the total structured supply in Downtown Dallas. While these garages are still operated by private operators they are signed and branded as CityPark facilities to provide a semblance of public parking in the downtown. Three of the garages are located in the Main Street District (DalPark, Metropolitan, and Third Rails Loft), while the fourth (Star Parking) is located within a reasonable walking tolerance. (pg 37)

CityPark Facility Walking Tolerance

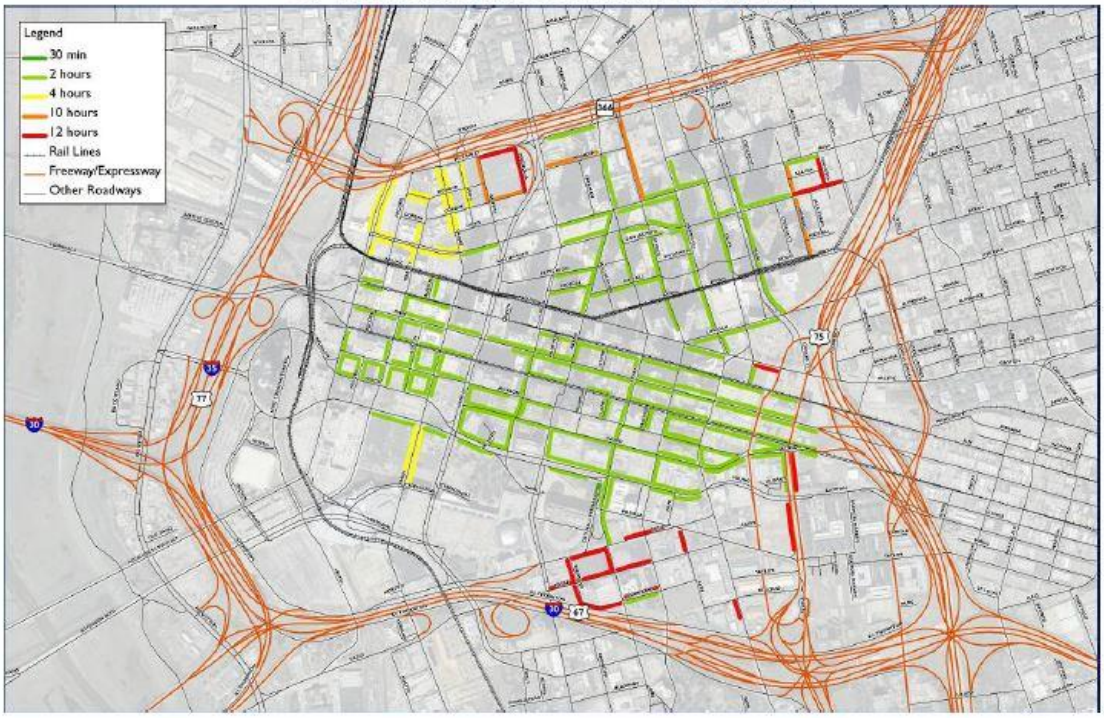


(pg 37)

On-Street Parking Rate Coverage Map



On-Street Parking Time Restriction Coverage Map

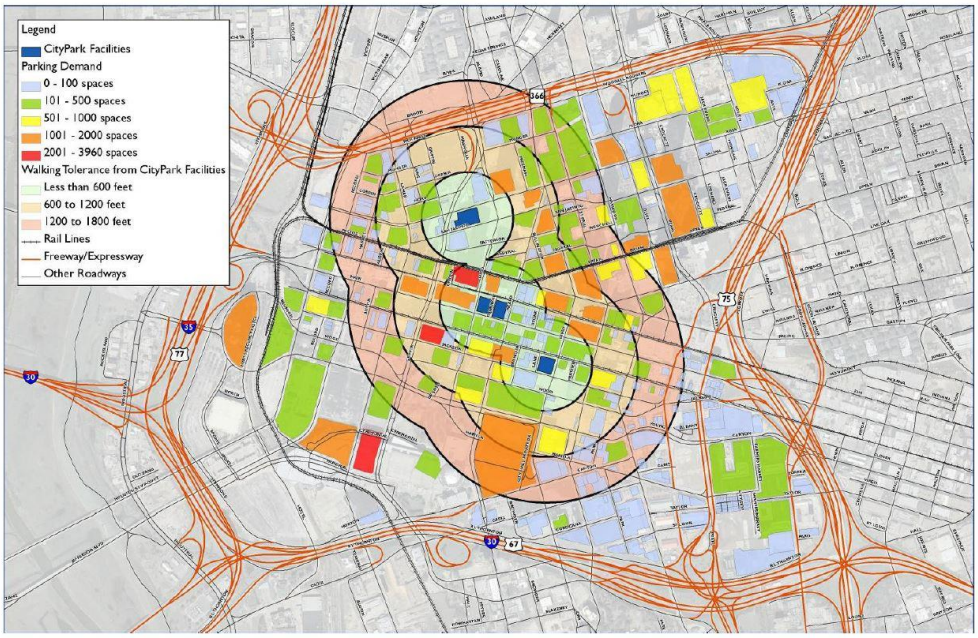


(pg 38)

Lack of Public Parking in the Areas of Demand

The CityPark system provides walking coverage for most of the Main Street district, and portions of the West End, Financial, and Civic Center districts. This coverage area is reasonable, given the major public draws and attractions in these areas of Downtown Dallas. (pg 39)

Public Parking Demand vs. CityPark Walking Coverage



(pg 39)

For the most part, the Financial and Civic Center districts can sustain their own demands through private underground office parking (on an area-wide level – we recognize there are locations with specific deficiencies). However, the West End and Arts Districts could probably stand to benefit from additional "public parking", specifically parking branded as part of the CityPark system. Neither of these areas is deficient, but both lack the presence of an easily identified public parking facility. (pg 39)

Additionally, the Union Station and Farmers Market districts may also benefit from established public parking once new development or full master plan visions are realized for those areas. This new public parking does not necessarily need to be publically owned, but there should be some publically available supply to support future retail and entertainment uses.

As for the Main Street district, while it has the majority of the CityPark facilities located within its boundaries, the demand generated by the mixture of retail, restaurant, office, and residential uses could dictate the need for additional parking in this area. If additional infrastructure is considered, it should be provided for public use and established as part of the CityPark system. (pg 40)

Parking Strategic Plan

Parking Strategic Plan Characteristics

The defining characteristics of parking management strategic plans include:

- An investment in strong program leadership
- The creation of community partnerships
- A focus on improving customer service and creating new standards of parking facility safety, maintenance and ease of use.

• A comprehensive approach to integrating parking and transportation planning into an "integrated access management system".
• An alignment and integration of parking philosophy and programs with larger community strategic goals
• Leveraging new technological advances
• Creating a defined parking investment strategy
• Promoting the new generation of parking facility designs and integrated mixed-use facilities to improve the urban form going forward
• Developing and applying sustainable design and management principles (pg 42)

2. Guiding Principle for - PLANNING/URBAN DESIGN POLICY DEVELOPMENT
The vision of an enhanced planning and policy development function will be pursued on multiple levels.
Effective parking planning will mean an improved understanding of parking supply/demand, application of advanced planning policies as well as the development of parking infrastructure that will enhance and better support the community strategic goals and urban design.

Parking management strategies and programs should support and compliment other access modes as a means to better facilitate the accessibility and user-friendliness of downtown Dallas as a preferred regional destination. Resources shall be effectively planned and managed to promote and support multiple access modes into and around the downtown. Primary access modes include automobile, transit, bike/motorcycle and pedestrian users.

Well defined parking facility design criteria, parking related streetscape enhancements and effective integration of signage and wayfinding elements are all areas that this principle will promote. Parking management will work toward developing a parking system that continues to be self-supporting and sets asides funds for maintenance reserves and future capital asset funding. (pg 48-49)

PRIMARY ACTION ITEM # 3:
Reshape approaches to off-street parking
It is recommended that the City make strategic investments in the development of public parking assets. These investments should be linked to larger community and economic development efforts, but should also build toward a goal of having strategically placed public parking assets that will promote adaptive reuse and in-fill projects as well as supporting an expansion of downtown retail
Action Items:
• Consider creative strategies to "unlock" existing private parking assets for after-hours use. (…)
• Begin offering transient parking in private facilities after hours using them initially as "valet parking only" to overcome private owner's reluctance to open their spaces to public uses. This approach should be established on a revenue sharing basis.
• Consider mechanical parking for special uses and restricted sites. (p 59)

PRIMARY ACTION ITEM # 4:
Enhance parking planning and special projects capabilities
Enhance support for & investment in multimodal & sustainable access strategies
Action Items:
• Develop new parking facility design guidelines.
• Draft a recommended parking development policy and program.

• Use good urban design principles to maximize the "value" of parking.
• Review and assess zoning codes and parking requirements on a district-by-district basis.
• Keep parking supply, utilization and land-use data up-to-date using the new parking demand model tool developed as part of this study.
• Create a series of parking planning maps and graphics to improve understanding and communications related to parking issues. Examples might include: mapping parking time limits, graphically illustrating parking utilization, etc.
• Provide strong support and a broader "integrated access and mobility management perspective" as a guiding principle for the DDI. Provide continued support for existing Transportation Demand Management (TDM) programs and challenge the DDI to find new and creative ways to support sustainable community access strategies.
• Develop and refine parking structure design guidelines.
• New Programs to consider might include:
    o Create an on-going Parking and Transportation Advisory Committee
    o Collaborative car sharing programs
    o Support for Bike Share programs
    o Reduced cost or more convenient parking for alternative fuel vehicles
    o Unbundled monthly parking scratch cards (pg 60)

PRIMARY ACTION ITEM # 12:

- Create a defined program of "Sustainability Initiatives" related to parking
- Integrate parking with transportation and access management decisions
- Manage to achieve a broader vision of improved community access
- Combat the tendency to put parking and transportation into separate silos

Action Items:

• Integrate parking decisions with on-going transit, bike, pedestrian and related access enhancements.
• Integrate smart TDM practices into parking planning decisions.
• Implement a Downtown car-share program for residents and workers.
• Adopt and promote "Green Parking" principles.
• Provide parking payment choices that support, rather than discourage, consideration of alternative mode choices.
• Support and coordinate with other transportation programs such as the Dallas Bikeway System.
• Explore using parking revenues as a funding source for a community bike share program. (pg 69)

ADDITIONAL STRATEGIC ACTION PLAN ITEMS
CATEGORY 2 - PLANNING/URBAN DESIGN POLICY
Action Item # 2.1 – Active Planning Function

Parking management should have an active planning function related to on-going parking supply/demand studies, parking utilization analysis, planning for new parking supply, assessing parking zoning requirements and promoting transportation alternatives and demand management strategies.

Intended Results:

Parking should work closely with the City Planning department and other agencies to remain engaged in community master plans, strategic planning efforts, transportation plans, traffic studies, etc.

Action Item # 2.2 – Parking Design Guidelines

Develop parking planning and design guidelines. Development of specific design criteria for parking lots and structures should be pursued. Consider requiring every new parking structure to be "mixed-use" to some degree, i.e. incorporate street level retail and preferably other land uses.

Intended Results:

Integrate parking design guidelines into the downtown master plan framework. (pg 73)

Action Item # 2.5 – Parking Zoning Code Review

Re-assess current parking zoning requirements. Consider concepts such as flexible zoning requirements, form-based code, smart growth strategies, and other progressive planning concepts.

Intended Results:

As part of assessing parking zoning requirements and flexible parking standards, develop a shared parking policy and take into account a variety of potential adjustment factors such as:

a. Geographic Location
b. Residential Density
c. Employment Density
d. Land-use Mix
e. Transit Accessibility
f. Car-Sharing
g. Walkability (pg 74)

Action Item # 2.7 – Support a "Park-Once" Philosophy

Evaluate "Park Once/Pedestrian First" type concepts for downtown. A convenient and reliable transportation link between parking structures and major downtown destinations should be assessed and, if adopted, heavily marketed. This concept also supports and promotes pedestrian environment enhancements.

Intended Results:

Promote a more pedestrian friendly environment that promotes enhanced connectivity between the downtown and related activity centers.

Action Item # 2.8 – Support Walkability Enhancements

Encourage and support the development of enhanced pedestrian amenities to improve the "walkability of downtown".

Intended Results:

Develop downtown as a more pedestrian friendly environment. (pg 75)

CATEGORY 5 - EFFECTIVE MANAGEMENT

Action Item # 5.16 – Develop a Parking Resource Library

As an additional staff development strategy, build a library of primary parking management, planning and general management textbooks. Incorporate reading goals into individual staff performance development plans on an annual basis. ***Kimley-Horn and Associates, Inc.*** has provided a Recommended Parking Planning and Management Library listing as a place to start. (See Appendix T).

Intended Results:

Build a specific and well-defined parking knowledge base for key departmental staff. (pg 86)

CATEGORY 9 - SUSTAINABILITY

Action Item # 9.2 – Evaluate and Promote "Green Design" Related to New Parking Structure Projects in the Future

Review the latest information on Parking and "Leadership in Energy and Environmental Design"

(LEEDs) Certification -

- LEED's Certification for Mixed Use Parking Facilities
- LEED's Certification Point System

Integrate "Green Opportunities" in parking facility design:

- Creating sustainable sites
- Site density
- Storm water management
- Landscape design
- Underground parking
- Green roofs
- Water efficiency

Evaluate opportunities for Facility Lighting and Energy Conservation:

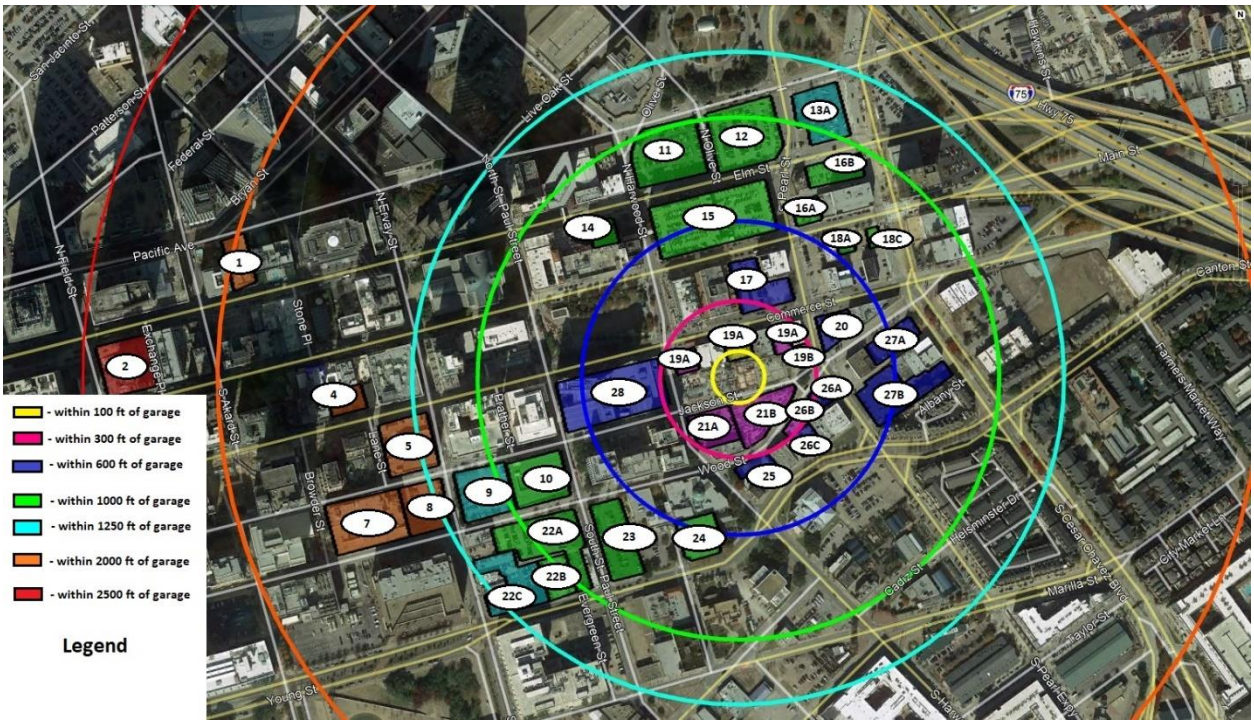
- Rewiring parking decks to allow the external bay of parking and the roof level lights to be turned off during the day.
- Using energy saving lighting.

Evaluate strategies to monitor parking environment air quality:

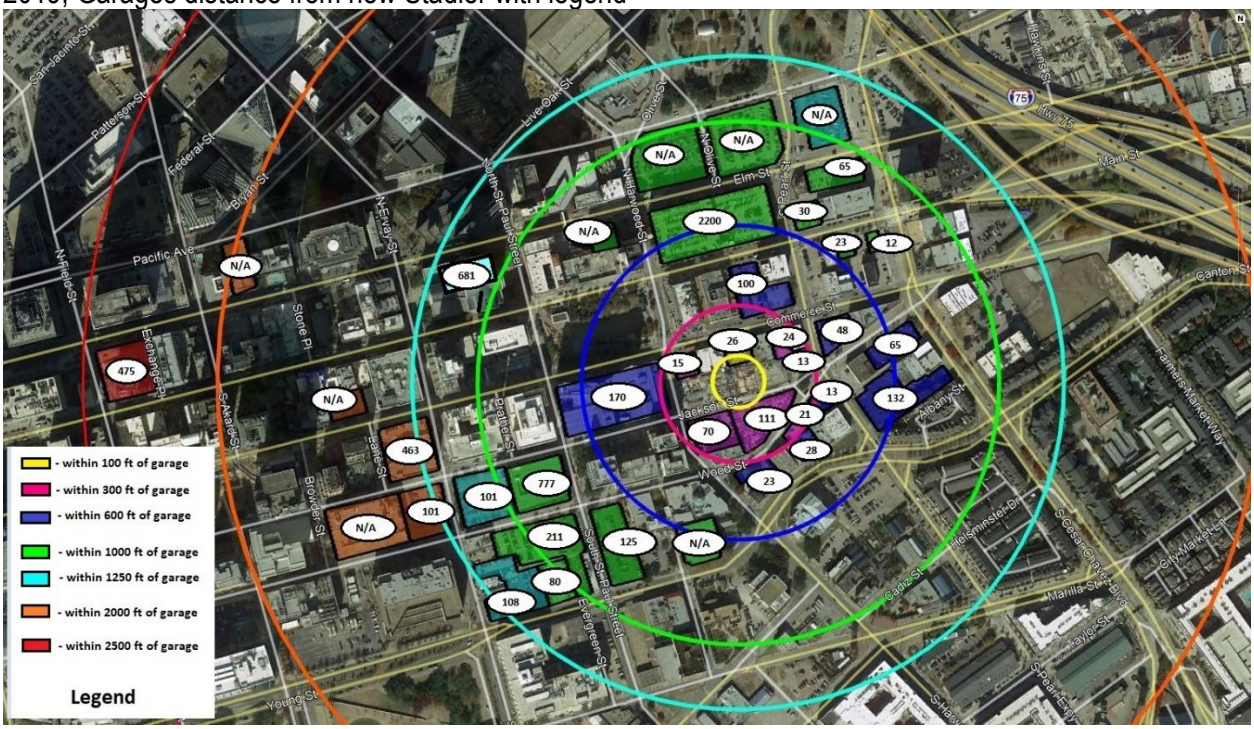
- Natural Ventilation and Openness to Exterior
- Carbon Dioxide Monitoring (pg 91)

Downtown. Parking Accumulation Study

Prepared by: DeShazo, Tang & Associates, Inc.
Prepared for: The New Statler
December, 2016 and 2019
(maps and observation counts in 2016 and 2019)



2019, Garages distance from new Statler with legend



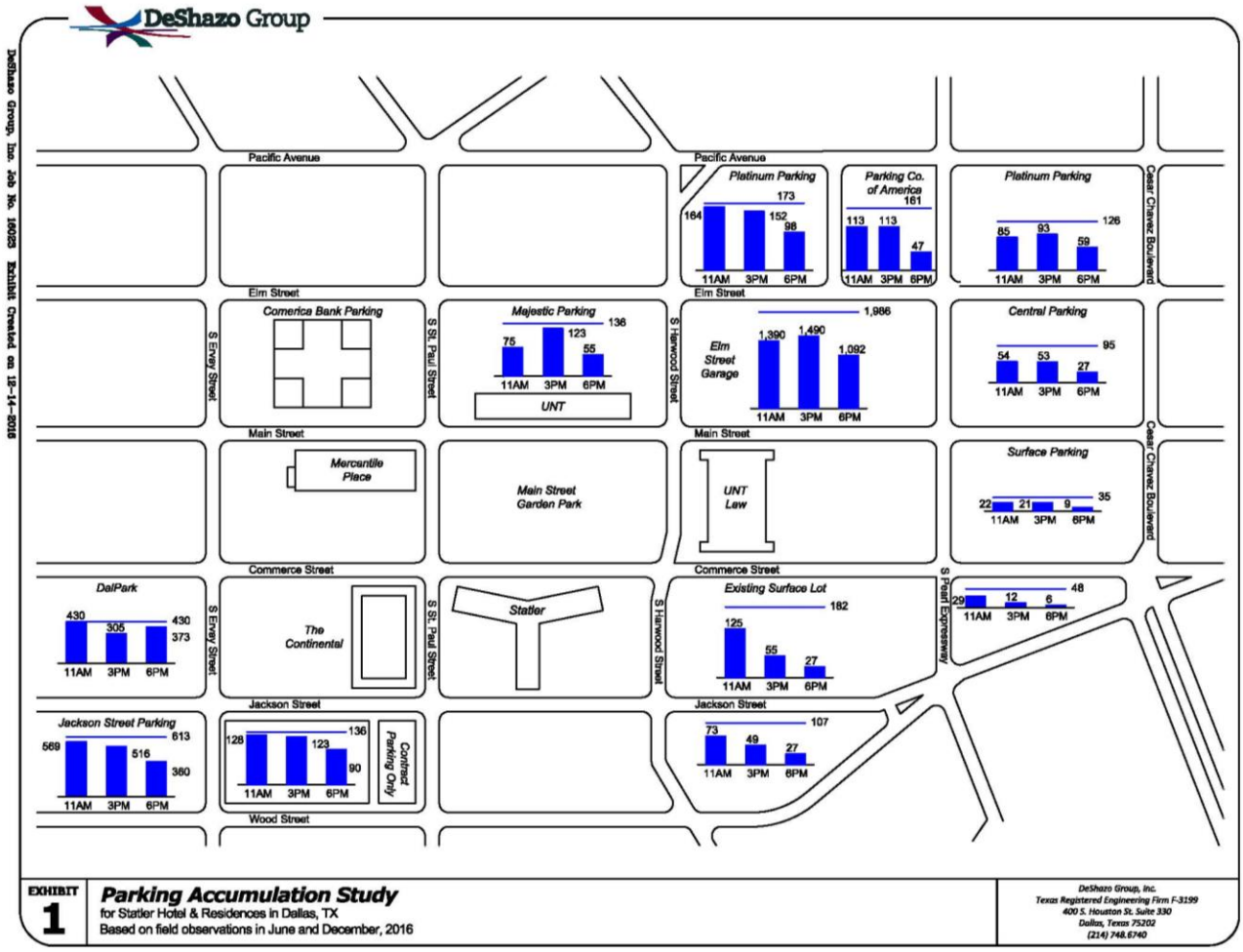
2019, Garages distance from new Statler with parking supply values

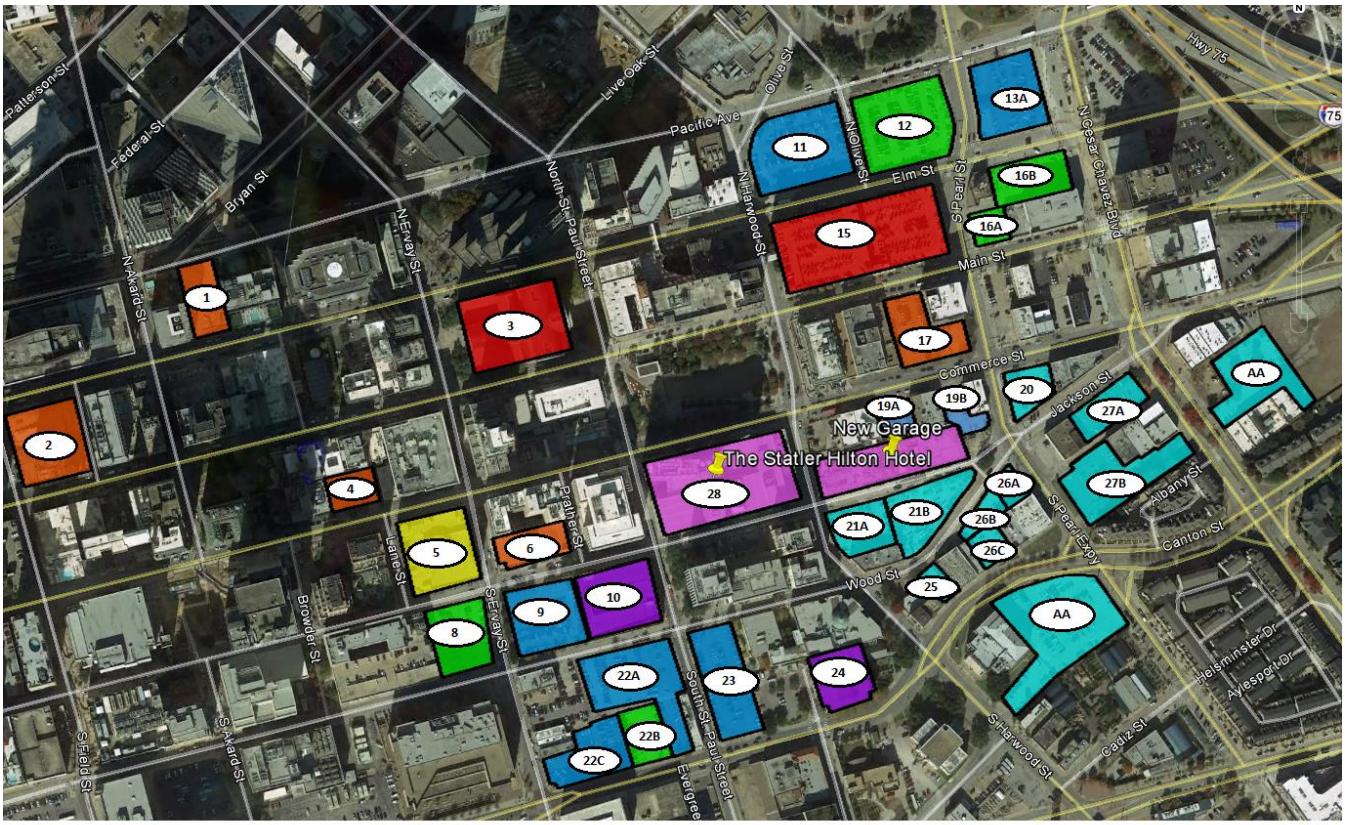
For 2019:

Staff explanation based on detailed count provided by DeShazo:

- *Observation counts have been conducted at 31 locations. 20 locations had under 90% occupancy at peak hour. 14 locations were under 85% occupancy at peak hour – out of which 4 locations were in the 80%ile, 7 locations between 50%ile and 80%ile, and 3 locations were under 30% occupancy.*
- *The peak hours are fluctuating between 9AM and 3PM, 22 locations having peak hours around this time of day. 5 locations had occupancy over 50% at 5PM, all the rest being under 50% occupancy. 13 had occupancy under 30% at 5PM.*

For 2016:





** NOTE: 'Additional Areas' were not specifically counted during this study, but are expected to be absorbed into the East Quarter District. **

TOD

Dallas Area Rapid Transit Red & Blue Line Corridors Transit-Oriented Development Parking Study

Project Partners: North Central Texas Council of Governments; Dallas Area Rapid Transit; City of Dallas; City of Garland; City of Plano; City of Richardson

Consultant Team: Nelson\Nygaard Consulting Associates; C.J. Hensch & Associates

IMAGES: Gateway Planning

December 2019

(86 pages)

https://www.nctcog.org/trans/plan/land-use/tod/planning-studies/fta-pilot

Executive Summary

Overview

This study offers a new set of regional data, from Dallas Area Rapid Transit (DART)-served Transit-Oriented Developments (TODs), to inform future decisions about how parking is supplied, managed, and evaluated against alternative land uses to increase TOD investment and effectiveness in achieving growth and sustainability.

Excessive parking supply, whether provided to meet code requirements or perceived market demands, can create a cost barrier to TOD and reduce its potential transit ridership benefits. On-site parking constitutes a significant portion of overall development costs, typically ranging from 20% to over 30% in urbanized areas1. The guarantee of convenient on-site parking has also been consistently linked to increased reliance on driving and decreased use of transit, even in transit-rich locations2 – and even more so if the cost of this parking is minimized3 or built into the cost of a development's housing or commercial-space costs4.

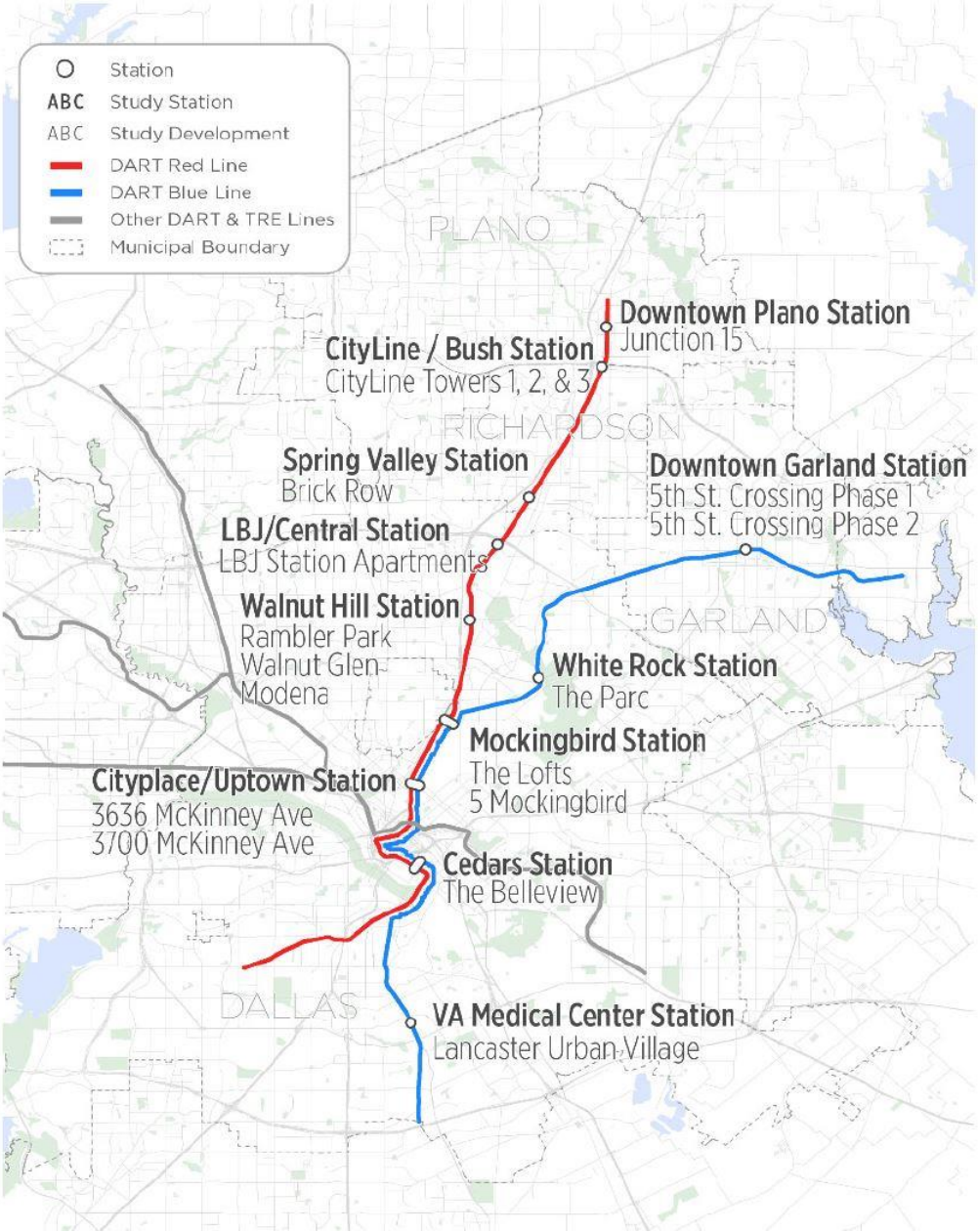
Yet, on-site parking remains a necessary amenity for most TOD investments, something that is particularly true for TOD in the DART region. The data and analysis presented in this report is provided to help cities and developers better anticipate rates of parking generation for land uses developed on sites with walkable access to DART stations. It is based on field-collected supply and occupancy data from 16 TODs located within 11 DART station areas. The central component of this report is a series of profiles from theses TODs, summarizing:

- On-site parking supplies, relative to code requirements;
- Parking demand patterns, from hourly measures completed continuously across a selected Thursday, Friday, and Saturday in the second half of 2018;
- Parking pricing and other key management practices;
- Incorporated land use types and measures;
- Key mobility amenities: distance to DART service and regional bike networks, bike parking, and local bus connections.

Results provide localized measures of parking demand generated by common TOD land uses that can be used to inform both local development codes and developers' parking-need assumptions, leading to more "right sized" parking inventories at future TODs. These data and analysis, and their implications, informed the compilation of best practices into a TOD Parking Toolbox, to be a standing reference document for aligning parking supply and management approaches to TOD objectives. The Toolbox presents a range of strategies for supporting code revisions, management practices, and growth strategies to encourage and

facilitate TOD growth by optimizing their performance of established and future parking assets in the NCTCOG region. (page 1-2)

Figure 6 Map of Studied Sites



(pg 13)

Key Site Analysis Findings

Most TODs are Significantly Overparked

- Most study sites were significantly over-parked – with vacancy well above the common 10% target rate during periods of peak demand.

- 13 of 16 sites never peaked above 80% utilization over the course of the 72-hour data collection periods.
- The excess parking capacity in these 13 sites combines to approximately 4,529 spaces (including 2,344 at City Line alone).
- The 2018 median cost of $17,464 to construct a single parking space (above-ground garage) in the Dallas region (not including the cost of land, or for operations and maintenance)5 emphasizes the significant cost of oversupplied parking – a cost that is passed on to project tenants and residents.
- This average suggests that the 4,529 spaces of excess parking among the studied sites represent over $79M in unnecessary infrastructure.

Affordable Housing and Office Uses are Particularly Overparked

- Affordable housing development parking had peak utilizations of 50% and 40%.
- Comparable market rate developments had much higher utilization peaks of as much as 93%.
- No office-dominant TOD site in this study surpassed 65% occupancy during surveys.
- The CityLine TOD, an example of an office-dominant project with some mixed uses built after DART service commenced, peaked at 56% utilization, despite a 99% occupancy rate for office space.

Supplied Parking Exceeds Requirements

- At 10 of the 16 studied sites, 10% to 69% more spaces were constructed than required by code. (pg 2) This suggests that reducing or removing minimum parking requirements may have limited or no impact on the amount of parking provided at most TODs.

Free Parking is the Norm

- A majority of the parking provided on each site is offered free of charge, which dissuades people from considering other travel options.
- While it is common for property managers to charge residents a monthly fee for a “reserved” space, it is not very common for residents to choose this option – largely because many projects have enough availability to make a standard parking space sufficiently convenient.

Shared Parking Can Work

- Availability was plentiful among the studied mixed-use facilities with a significant share of publicly available on-site spaces.
- Based on interviews and surveys, however, there appears to be significant discomfort with the concept of sharing parking beyond development boundaries – a discomfort, primarily among property owners and their tenants, that may be reduced when presented with excess-capacity findings such as those from this study.

Shared-Parking Modeling Works

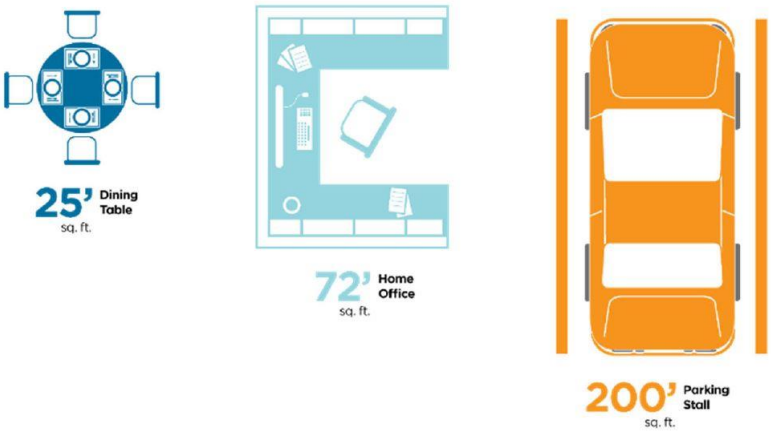
- A shared-parking model -- based on the one developed by the Urban Land Institute (ULI)6 to anticipate the cumulative/aggregate generation of parking demand from several land uses sharing the same on-site parking supply -- outperformed applicable parking requirements and built parking supplies in anticipating peak parking demand and supply needs.
- For 10 out of the 16 sites, shared-parking model outputs came closer to observed peak-occupancy demand than either the project’s onsite supply or its minimum code requirement.
- By comparison, constructed parking supplies most-consistently over-anticipated need.

 While the shared-parking model uses traditional source materials (like the ITE parking demand rates by land use), it assumes data-based realities such as offsetting peak-demand patterns, internal-capture impacts, and other shared-parking efficiencies. (pg 3)

The Problem with Too Much Parking

The downsides of any development having too little parking are widely understood. Insufficient parking in an automobile dependent region can make on-site housing and job opportunities unappealing and make businesses inaccessible to customers. However, providing parking well in excess of peak demand can also create significantly negative consequences, particularly for TOD. (pg 7)

Figure 4 Comparative of Spaces by Area



(pg 7)

Regional Growth Brings Challenges

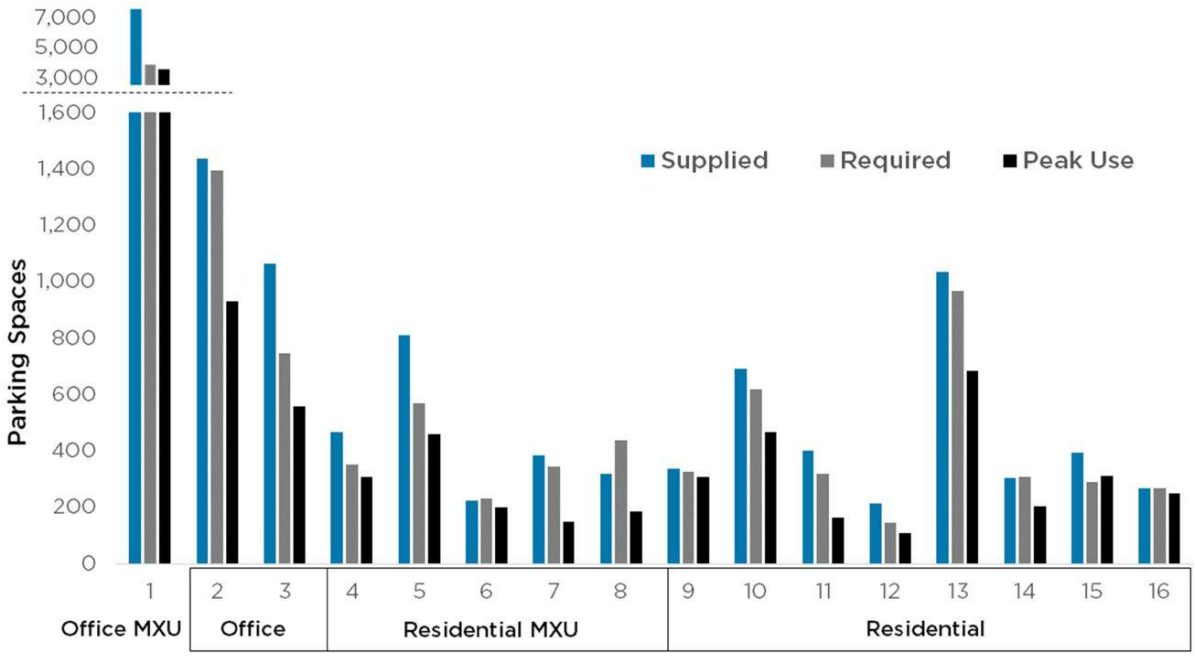
The North Central Texas Region is expected to grow by roughly 50% in both population and employment by 2045.12 The ongoing construction of new housing, services, and places of employment is a positive sign of accommodating such growth. At the same time, rising housing and transportation costs are challenging affordability in the region:

 A majority of families in the City of Dallas are spending more than 30% of their income on housing.13

 A majority of households in the NCTCOG region are spending over 45% of income on housing and transportation – a rate above what is recommended by the Center for Neighborhood Technology (CNT).

The extent to which the cost of housing and transportation can be reduced will be an important factor in determining future quality of life in the North Central Texas region. Reducing the burdens associated with the construction of unneeded parking is an example of how the cost of housing and transportation can be reduced. (pg 8)

Figure 9 **Parking Observations across all 16 Study TODs**



LEGEND

1: CityLine 1, 2, and 3	5: West Village Garage 3	9: Junction 15	13: Brick Row
2: Walnut Glen Tower	6: The Lofts at Mockingbird Station	10: 5 Mockingbird	14: LBJ Station Apartments
3: Rambler Park	7: 5th St Crossing City Station (Phase 1)	11: Lancaster Urban Village	15: The Parc
4: West Village Garage 2	8: 5th St Crossing City Center (Phase 2)	12: The Belleview	16: Modena

(pg 18)

Part Two – Toolbox

(On the website too: https://www.parkingtoolboxntx.org/ptdm-tools-content)

Improve mobility options to reduce parking
Unbundled parking costs
Fee-in-lieu of parking
Public-private development
Future re-use parking
Curb space management
Crediting off-site parking
Monetizing excess capacity
Parking maximums
Parking management districts
Code incentives for public parking
Shared parking agreements

General guidelines and studies

Urban Design Guidelines for Projects Located in City of Dallas Tax Increment Financing Districts

City of Dallas, Office of Economic Development, Dallas CityDesign Studio
updated February 2015
(31 pages)
https://www.dallasecodev.org/DocumentCenter/View/1986/TIF-Design-Standards-PDF

Introduction
Purpose
This document will apply to all new development and redevelopment projects in the City of Dallas Tax Increment Financing (TIF) districts. There are currently eighteen TIF districts located in and managed by the City. In addition, the term of the State-Thomas TIF District has expired, but the district has seen substantial public investment. Other districts can be added at the discretion of City Council in the future. (pg 3)

Projects in City of Dallas TIF districts should enhance the attractiveness and comfort for all users of the districts by:

- Creating a quality urban environment through building design, materials, and orientation.
- Producing streetscapes that embrace and encourage pedestrian activity while safely accommodating all modes of transportation.
- Preserving and setting aside appropriate open space and park area.
- Providing connections to existing or planned trails, transit stations, and any applicable public destinations.

By tying these guidelines to TIF funding, the City hopes to incentivize developers and ensure that projects receiving TIF funds align with the City's vision for future development of the districts. As a partner in each project, the City hopes to channel investment to communities in need of a more sustainable and livable built environment. (pg 3)

Part II: Guidelines for Private Property Development
Parking

Objective: These guidelines recognize the necessity of providing off-street parking and aim to reduce its visual impact.

Structured parking is preferred over surface parking. In all cases, the sharing of parking between different uses is encouraged. Visitor parking must be identifiable and incorporated into the pedestrian circulation plan.

Structured Parking

- Maintain street level of building for active, pedestrian uses. If this is not possible at the time of construction, make the ground floor flexible enough to be retrofitted for this purpose.
- Design the front façade so that it appears architecturally finished and complements the surrounding buildings on the block face.
- Conceal parked cars and structural elements such as ramps.
- Orient the narrow façade to the street.

- Limit vehicular entry points and façade openings.
- Highlight pedestrian circulation and entrances.

Surface Parking

- Locate behind or to side of building.
- Limit vehicular entry points and provide access where it will not interfere with pedestrian movement.
- Provide for a pedestrian network within and adjacent to the lot.
- Screen edges along streets and sidewalks with landscaping or low walls and fences of durable, attractive materials.
- Adhere to landscaping standards and utilize rainwater harvesting.
- Where soil type allows, consider using alternative materials or other treatments to increase the amount of permeable surface.
- Primary building entrances should not face surface parking lots.
- Shade surface lots to reduce heat island effect. (pg 14)

Trust for Public Land, bcWorkshop, Texas Trees Foundation, Dallas Parks and Recreation Department
Maps
https://web.tplgis.org/smart_growth_dallas/

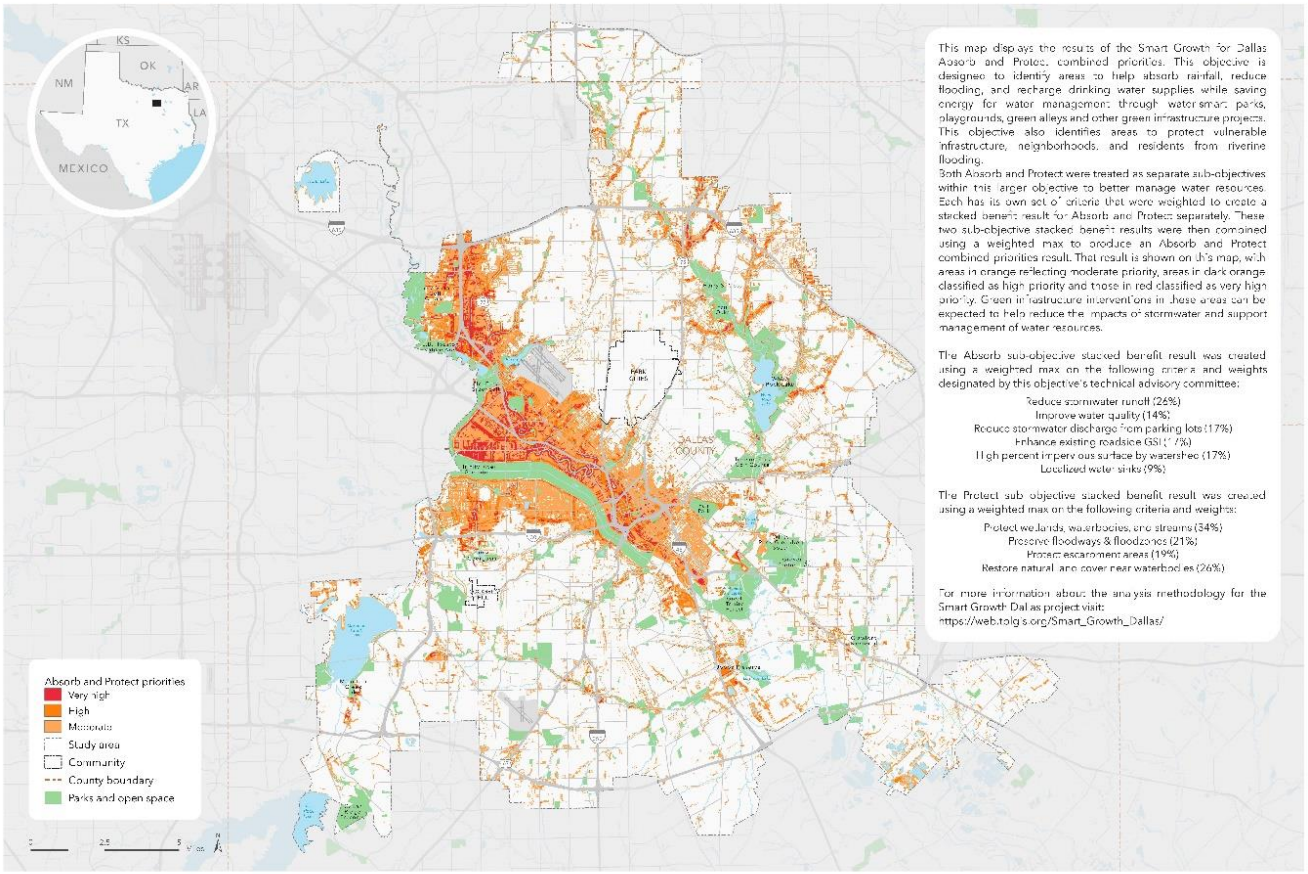
In 2016, The Trust for Public Land, in partnership with bcWORKSHOP, the Texas Trees Foundation, and the Dallas Park and Recreation Department, launched an effort to understand how parks, trails, and green spaces can help Dallas address environmental sustainability, economic inequality, and urban resilience—and thrive in the 21st century. Working with over 100 stakeholders, academic institutions, nonprofits, health providers, and community groups, we developed Smart Growth for Dallas to map and prioritize locations in Dallas where investments in parks, open spaces, and green infrastructure can improve the environmental, social, and economic resilience of the city.

The Smart Growth for Dallas Decision Support Tool is an interactive geo-mapping platform that draws upon hundreds of GIS-based datasets to target nature-based investments that can best serve the communities in the City of Dallas. Pairing community-articulated priorities with health, social, and environmental data, the Decision Support Tool was made available to the public in 2018. Since then, it has been used by countless partners to help make data-informed investments, including the acquisition of 42 acres of new parkland for the City of Dallas.

After launching the Decision Support Tool in October 2018, The Trust for Public Land published an update to the tool in July of 2020. Updated datasets included: Parcels, Trails, Parks, Schools, DART Stations, Bus Stops, Census Data, Flood Zones

Absorb Map

This objective is designed to identify areas to help absorb rainfall, reduce flooding, and recharge drinking water supplies while saving energy for water management through water-smart parks, playgrounds, green alleys and other green infrastructure projects. This objective also identifies areas to protect vulnerable infrastructure, neighborhoods, and residents from riverine flooding.
https://web.tplgis.org/dallassmartgrowth/pdfs/2020/SmartGrowthDallas_PhaseII_AbsorbProtectPriorities_34x44_20200610.pdf



Absorb and Protect priorities

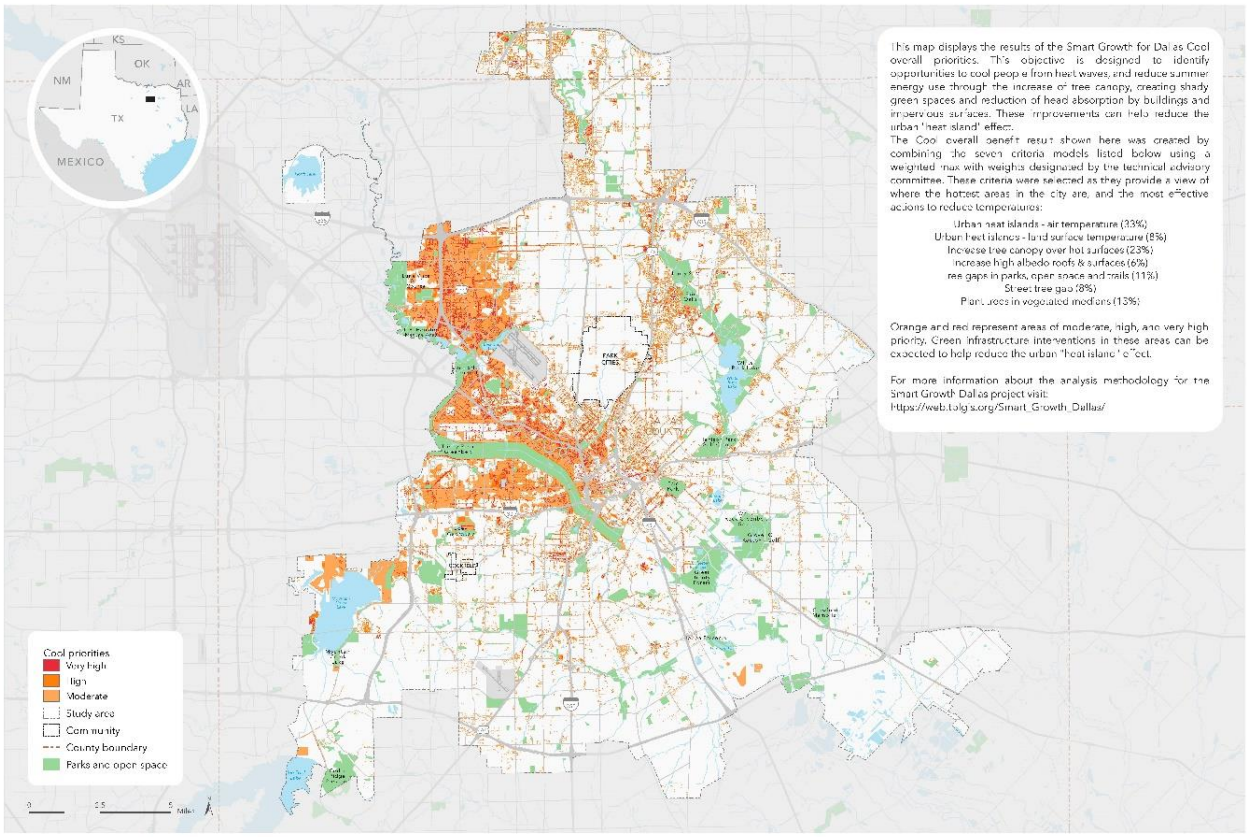
SMART GROWTH FOR DALLAS

Texas Trees Foundation
Dallas Park & Recreation
The Trust for Public Land

Cool Map

This objective is designed to identify opportunities to cool people from heat waves, and reduce summer energy use through the increase of tree canopy, creating shady green spaces and reduction of head absorption by buildings and impervious surfaces. These improvements can help reduce the urban "heat island" effect

https://web.tplgis.org/dallassmartgrowth/pdfs/2020/SmartGrowthDallas_PhaseII_CoolPriorities_34x44_20200610.pdf



Cool priorities

SMART GROWTH FOR DALLAS

Texas Trees Foundation

Dallas Park & Recreation

The Trust for Public Land

Dallas Water Gardens Feasibility Analysis

Prepared for: North Central Council of Governments
Prepared by: Sakura Robinson; Halff; Terradyne
June 30, 2019
https://www.nctcog.org/nctcg/media/Transportation/DocsMaps/Quality/Environ/Dallas-Water-Gardens-Feasibility-Analysis-Main-Report.pdf

Executive Summary

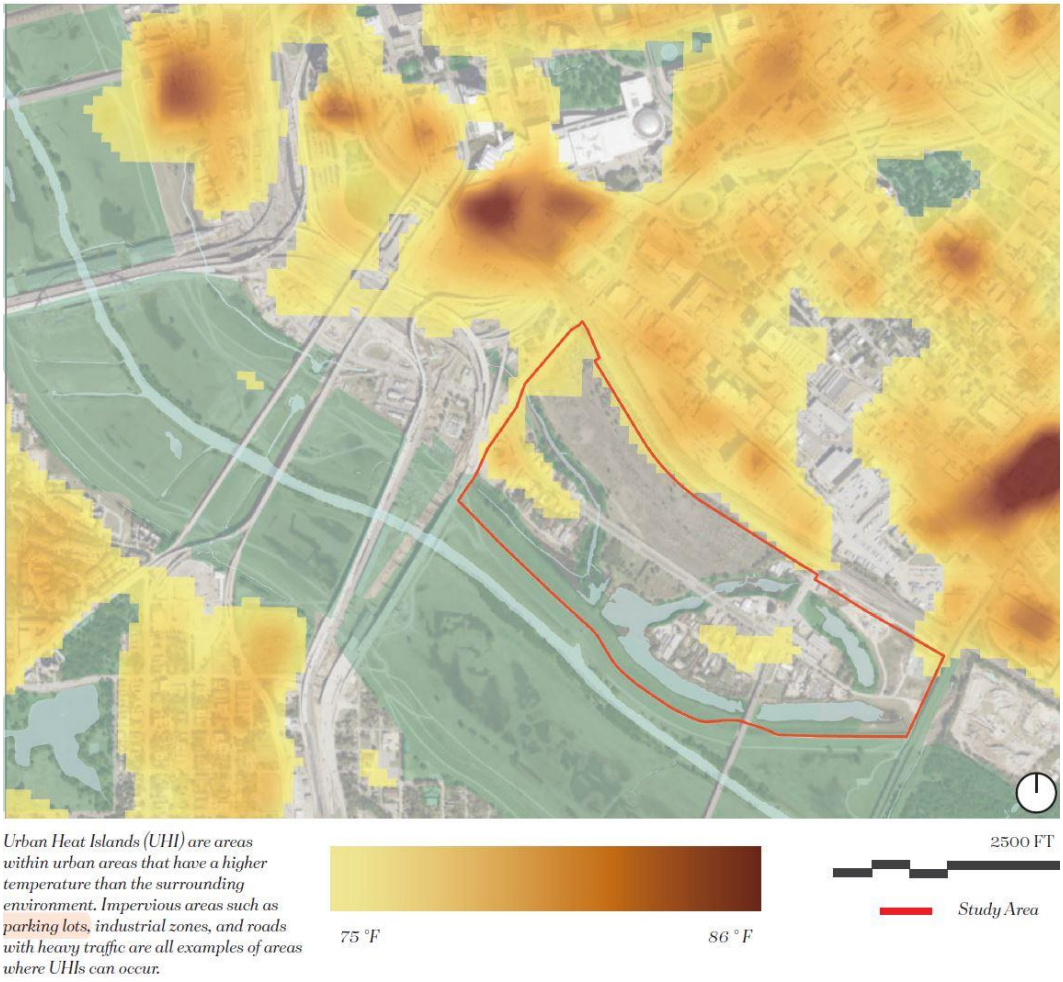
The Dallas Water Gardens (Water Gardens) is a project planned south of downtown, along the forgotten path of the Trinity River where it meandered before levees were built to contain it early in the 20th Century. The impetus for the Dallas Water Gardens grows out of the storied past of the Trinity River's history and is nurtured by both the continued necessity of flood and drought control, as well as the City's enthusiasm for public green spaces. (page 1)

Urban Heat Islands (UHI) are areas within urban areas that have a higher temperature than the surrounding environment. Impervious areas such as parking lots, industrial zones, and roads with heavy traffic are all examples of areas where UHIs can occur.
UHIs impact the urban environment in the following ways:

- Dangerous outdoor conditions for residents
- Increased Energy Demand
- Increased Air and Greenhouse Gas Pollution
- Reduced Water Quality

UHI's can be mitigated through green infrastructure such as improved tree canopy cover, as well as structural changes such as repainting roofs white.

The above map was created by analyzing remotely sensed thermal data to display areas which show a higher than the regional average temperature. This particular image was taken at 5 PM on March 22, 2018, when the average temperature in the Dallas area was 75 °F. The map illustrates that areas with high industrial activity or significant impervious cover exhibit temperatures over 10 °F above average, while the vegetated floodplain and other green spaces exhibited lower than average temperatures. (page 34)



2018 State of Dallas Housing Report. Regional Housing Production, Population Change, and Housing Accessibility

Prepared by: The buildingcommunityWORKSHOP

May 2018

(44 pages)

https://static1.squarespace.com/static/5248ebd5e4b0240948a6ceff/t/5b087f3370a6ad6970051ed4/1527283516453/SoDH_FinalReport_05252018_2.pdf

The third annual State of Dallas Housing report, the latest in our series of data-driven analytics reports that examines the issue of housing affordability within Dallas and present opportunities for equitable housing development.

Access North Texas. Regional Public Transportation Plan for North Central Texas

Prepared by the North Central Texas Council of Governments
March 2018
https://www.nctcog.org/trans/plan/transit/transit-planning/access-north-texas

INTRODUCTION
The purpose of Access North Texas is to improve public transportation for older adults, individuals with disabilities, and individuals with lower incomes. These populations can have difficulty finding public transportation options that connect them to doctor's appointments, work opportunities and education or job training. This plan identifies where these transportation connections do not exist or could be improved within Dallas County. This chapter will give an overview of the planning process, research conducted and collected, public outreach meetings, the transportation poll used to collect personal input on public transit needs, and the prioritized strategies for Dallas County.

RESEARCH
The Transit Accessibility Improvement Tool (TAIT)
The TAIT was developed to identify locations with certain demographic factors that may indicate a greater need for public transportation. The populations of individuals over age 65, residents below the poverty line, and persons with disabilities were each compared to the regional percentage of the population in that demographic. A map was created based on areas that were above the regional percentage in zero, one, two, or all three of the demographic categories. The more categories that an area is deemed above the regional percentage, the more likely it is that area is to need transit. Zero car households was provided as a supplemental layer to identify households above the regional percentage that do not having a working vehicle available. The tool is useful in identifying groups of people who could benefit from transit services, but is not intended to be the deciding factor in decisions regarding public transportation. (page 3.1)

Multiple Use

Introduction:
A shared parking demand analysis is a multifaceted study. A shared parking analysis provides a systematic way to apply appropriate adjustments to parking demand projections for combined land uses. A key step in gaining acceptance for shared parking is the understanding of factors that result in the reduced need for parking spaces for a combination of land uses. Shared parking analyses derive from the concept developed in the Urban Land Institute (ULI) Shared Parking methodology in 1983 and recently revised in 2020. It integrates provisions for reductions created by multi-purpose trips and utilizes parking demand ratios and hourly profiles obtained from single land use studies.
The shared parking study methodology evaluates the parking demand for a mix of use considering the time-of-day compatibility and other inherent characteristics of a proposed development program. In general, shared parking acknowledges efficiencies of net parking demand within a common parking facility that is generated by multiple land uses. Efficiency is realized due to the nature of combining multiple uses,

including complementary time-of-day characteristics and internal capture among land uses (e.g., multi-purpose trips). A shared parking analysis can be summarized in steps:

1. *Identify main land use categories.*
2. *Apply independent parking rates for long-term (e.g., residents, employees) and short-term (e.g., customers, visitors, patients) parking for each independent land use identified in Step 1.*
3. *Apply an hourly profile to each parking rate. These profiles reflect hourly adjustments for typical weekdays and weekends; these factors reflect unique time-of-day parking needs by each land use.*
4. *Adjust ratios for modal split and auto occupancy. The ULI's Shared Parking, 3rd edition (2020) provides base Journey-to-Work ratios based on U.S. Census data.*
5. *Apply noncaptive adjustments ratios—the synergy component of shared parking considers the complementary effect of uses in a mixed-use development in which patrons are able to conduct a multi-purpose trip while utilizing a single parking space.*
6. *After calculating hourly parking demand for each use based upon its corresponding parking rates and hourly, monthly and site-specific adjustments, totals are tabulated to identify the overall parking demand by hour on a typical weekday and weekend.*
7. *The analysis is then refined and customized to determine whether scenarios reflect all critical parking needs considering unique characteristics that may affect the overall parking demand.*
8. *Finally, a shared parking analysis must recommend a parking management plan in order to consider the likelihood of enforcement of any required management efforts.*

The following are selected excerpts from various parking studies for shopping centers, from large to small scale. Where available, multiple studies from different years for the same location have been included, for comparison and trend-observation purposes.

NORTHPARK CENTER

Location: northwest quadrant of U.S. 75 (North Central Expressway) and Loop 12 (Northwest Highway)
85.8 acres

Parking Analysis

Prepared by: DeShazo, Tang & Associates, Inc.
BDA 090-047
April 2008
(22 pages)

Existing zoning: RR. Parking requirements per Chapter 51A

Introduction

DeShazo, Tang & Associates, Inc. (DT&A) recently conducted a parking accumulation study at NorthPark Center. The services of DT&A were retained in the past to analyze the Dallas City Code parking requirements as well as the parking demand for the shopping center. For that purpose, DT&A generated a parking projection model that has been continually updated to reflect changes in the leasing program throughout the expansion phases of NorthPark Center. (pg 1)

(…)

Parking Supply

A field-verified inventory at NorthPark Center revealed a total of 8,995 off-street parking spaces.(pg 1)

(…)

Code Parking Requirement

The parking requirements for NorthPark Center are based upon Section 51A-4.301(c)(7) of the Dallas Development Code. Applicable retail mall exclusions reduce the direct parking code requirements. In addition, the Board of Adjustment at its public hearing held on Wednesday, February 18, 2004 granted a special exception of 1,794 off-street parking spaces. The Development Code requirement is reduced by the parking special exception to a total of 8,942 spaces as calculated in Exhibit B. (pg 1-2)

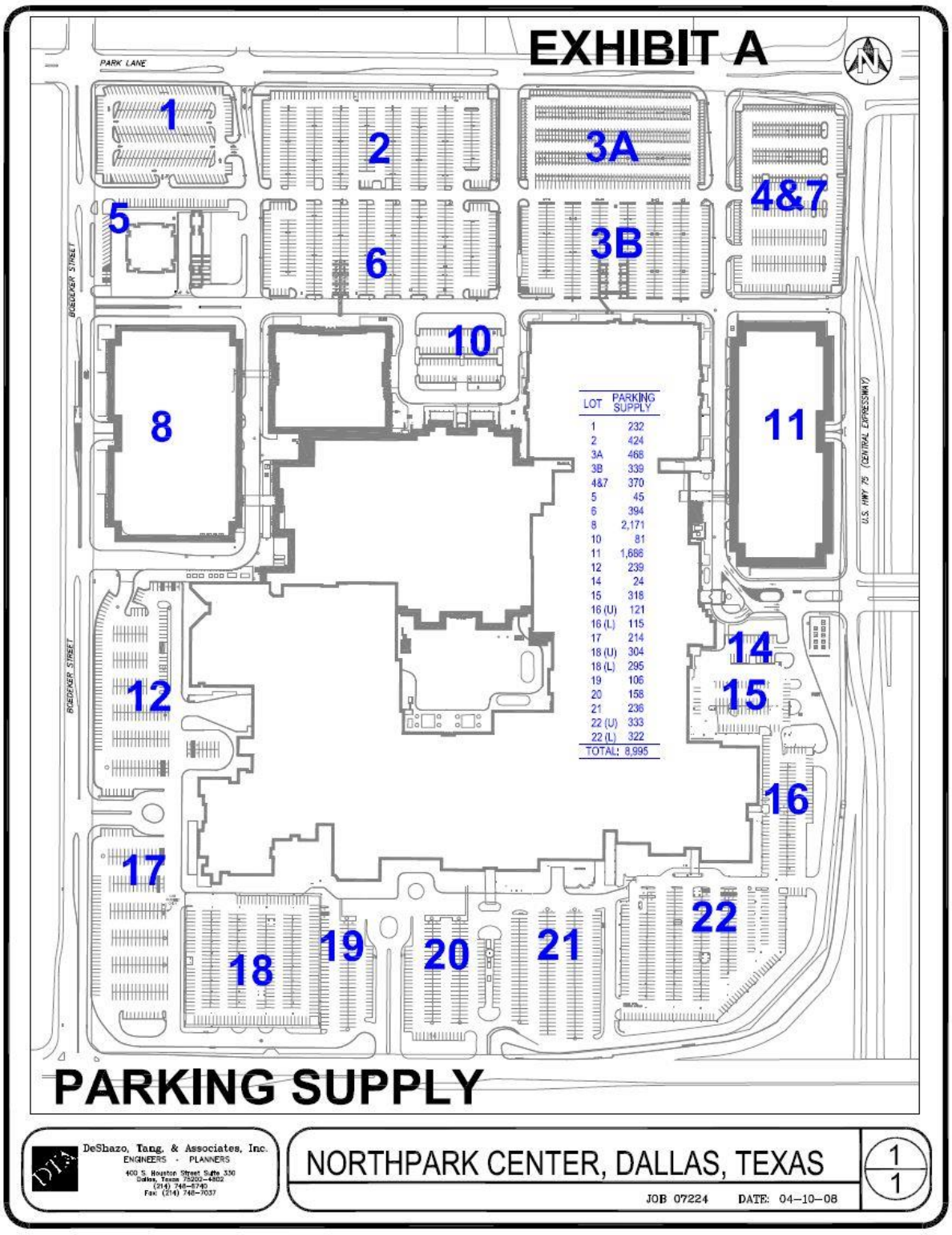


EXHIBIT A
PARK LANE
BIERDEKER STREET
BIERDEKER STREET
U.S. HWY 75 (CENTRAL EXPRESSWAY)
1
2
3A
4&7
5
6
3B
10
8
11
12
14
15
16
17
18
19
20
21
22
LOT PARKING SUPPLY
1 232
2 424
3A 468
3B 339
4&7 370
5 45
6 394
8 2,171
10 81
11 1,686
12 239
14 24
15 318
16 (U) 121
16 (L) 115
17 214
18 (U) 304
18 (L) 295
19 106
20 158
21 236
22 (U) 333
22 (L) 322
TOTAL: 8,995
PARKING SUPPLY
DeShazo, Tang, & Associates, Inc.
ENGINEERS - PLANNERS
400 S. Houston Street Suite 330
Dallas, Texas 75202-4802
(214) 748-6740
Fax (214) 748-7037
NORTHPARK CENTER, DALLAS, TEXAS
JOB 07224 DATE: 04-10-08
1
1

(pg 4)

DeShazo, Tang & Associates, Inc.
4/29/2008

EXHIBIT B

Dallas Development Code Requirements
for NorthPark Center

Use	Amount GBA	Section of Code	Dallas Development Code Rate	Spaces Required (Straight Code)	Retail Mall Multiplier	Spaces Required (Retail Mall)
				-------Retail Mall*-------		
Retail	1,712,287 SF	4.210(14)	1 space/ 200 SF	8,561	90%	7,705
Furniture Store	41,655 SF	4.210(12)	1 space/ 500 SF	83	90%	75
Common/Service Area	309,098 SF**	4.210(14)	1 space/ 200 SF	1,545	90%	1,391
Restaurant						
as main use	72,548 SF	4.210(24)	1 space/ 100 SF	725	90%	653
pavilions (as main use)	7,890 SF	4.210(24)	1 space/ 100 SF	79	90%	71
as accessory use	27,477 SF	4.210(24)	1 space/ 200 SF	137	90%	124
Mall Office	7,942 SF	4.207(5)	1 space/ 333 SF	24	90%	21
Bank Office Building	69,451 SF	4.207(5)	1 space/ 333 SF	209	100%	209
Movie Theater	27,255 SF seating area	4.210(30)	1 space/ 28 SF seating area	973	50%	487
			Totals:	12,338		**10,736**
			Less Feb. 28, 2004 Special Parking Exception			-1,794
			Total Parking Requirement			**8,942**

* Reference Dallas Development Code - exclusions defined in 51A-4.301(c)(7)
** 311,001 SF calculated by Omniplan 06/21/05 minus La Madeline and PF Chang's Seating Area
SOURCE: See attached Leasing Program
NOTE: Proposed dining pavilion calculated as follows:

P.F. Chang's:	2,543 SF
McCormick & Schmicks:	2,215 SF
Luna de Noche:	1,066 SF
Kone Grill:	1,066 SF
Maggiano's:	1,000 SF
Total:	7,890 SF

NorthPark Center Parking Analysis
Job No. 07224

(pg 5)

Observed Parking Demand Data

DT&A collected hourly parking accumulation counts at NorthPark Center on Friday, December 14, 2007, and Saturday, December 15, 2007, from 9:00 am to 10:00 pm. These accumulation counts reflect the fluctuation of parking needs throughout various parking areas and also validate the peak-hour parking demand under the existing leasing conditions during a typical holiday shopping season. (pg 2)

Conclusion

This analysis indicates that the existing parking supply of 8,995 spaces exceeds the 8,942 spaces needed to meet the City of Dallas' adjusted parking requirement by 53 spaces. The supply also satisfies the peak parking demand of 8,834 spaces observed on December 15, 2007 at 3:00 pm and provides a surplus of 161 spaces. (pg 3)

Parking Analysis

Prepared by: DeShazo, Tang & Associates, Inc.
BDA 090-047
February 2010
(19 pages)

Executive Summary

The services of DeShazo, Tang & Associates, Inc. (DT&A) were retained by NorthPark Management Company to analyze the parking needs for *NorthPark Center* in Dallas, Texas and to asses the validity of a request to reduce the Code parking requirement by 200 parking spaces in conjunction with proposed modifications within the site. Proposed modifications include changes of use in existing leased areas, providing awning on existing outdoor dining area, and a minimal increase in building area (approximately 0.07%).

As a result of these changes, the Code requirement for the site increases from 8,890 to 9,193 off-street parking spaces. A Code deficit of 200 spaces is anticipated over an existing parking supply of 8,993 off-street parking spaces. To offset this deficiency, a Parking Special Exception of 200 spaces is being requested on the basis that the site provides adequate parking to serve the existing and future parking demands and is in accordance with industry standards for the land uses provided.(pg i)

1.0 Introduction

1.2 Site Description

NorthPark Center is situated on an 85.8 acre tract of land located in the northwest quadrant of U.S. 75 (North Central Expressway) and Loop 12 (Northwest Highway) in Dallas, Texas. When it opened in 1965, NorthPark Center provided the first regional shopping center in Dallas. (…) Currently, NorthPark Center contains approximately 2.2 million square feet of gross area including over 225 stores and restaurants. A field-verified inventory at *NorthPark Center* in December 2009 revealed a total of 8,993 off-street parking spaces. (pg 1)

DeShazo, Tang & Associates, Inc.
February 16, 2010

EXHIBIT B

Parking Requirements for NorthPark Center (Proposed Conditions)

per §51A of the Dallas Development Code

Use	Amount GBA	City Code Reference	Code Parking Rate	Spaces Required (Straight Code)	Retail Mall Multiplier	Spaces Required (Retail Mall)
					---Retail Mall Provisions[A]---	
Retail Use	2,028,594 SF[B]	4.210(14)	1 space/ 200 SF	10,143	90%	9,129
Restaurant						
Main Use	108,369 SF	4.210(24)	1 space/ 100 SF	1,084	90%	975
Limited/Accessory Use	36,951 SF	4.210(24)	1 space/ 200 SF	185	90%	166
Mall Office	7,942 SF	4.207(5)	1 space/ 333 SF	24	90%	21
Bank Office Building	69,451 SF	4.207(5)	1 space/ 333 SF	209	100%	209
Movie Theater	27,255 SF[C]	4.210(30)	1 space/ 28 SF	973	50%	487
				Subtotal Parking Requirement:		10,987
				Less Feb. 28, 2004 Special Parking Exception:		-1,794
				Total Parking Requirement:		9,193
				Existing Parking Supply (field verified, December '09):		8,993
				Existing Parking Surplus/(Deficit):		-200

SOURCE: See attached Leasing Program

[A] Reference Dallas Development Code - exclusions defined in 51A-4.301(c)(7)
[B] includes 311,001 SF of common area as calculated by Omniplan 06/21/05
[C] Seating Area Only

Proposed Changes:

1) Robb & Stucky (Furniture) to Retail	41,655 SF	*(existing area - change in use)*
2) Existing Robb & Stucky area expansion	1,763 SF	*(proposed area)*
3) Bailey Banks & Biddle (Retail) to:	6,078 SF	*(existing area)*
Retaurant Use	2,574 SF	*(existing area - change in use)*
Retail Use	4,267 SF	*(existing area , plus 763 SF)*
4) Bath & Body Works (Retail) to:	6,571 SF	*(existing area)*
Retaurant Use	2,058 SF	*(existing area - change in use)*
Retail Use	4,513 SF	*(existing area)*
5) Part of La Duni (Restaurant) to Retail	1,358 SF	*(existing area - change in use)*
6) Louis Vuitton expansion (new Retail)	3,000 SF	*(proposed area)*
7) PF Chang's expansion	1,505 SF	*(proposed area)*
8) McCormick & Schmick's expansion	2,215 SF	*(proposed area)*
9) Luna de Noche's Awning	1,600 SF	*(existing outdoor area)*
10) Kona Grill's Awning	1,600 SF	*(existing outdoor area)*
11) Ultimate leasing area (retail) to Restaurant	19,714 SF	*(existing area - change in use)*

2.3 Parking Special Exception Request

Parking standards established by city codes provide a base requirement for new developments to operate efficiently with minimal external effects upon neighboring properties. However, a parking supply designed directly from code parking requirements does not consider actual parking characteristics exclusively associated to large-scale mixed-use developments. (pg 5)

DT&A recommends an additional exception of 200 spaces from the Code parking requirement for NorthPark Center. This request is derived from calculations presented in this report and summarized as follows:

_ Non-destination restaurant use reduction ..... 116 spaces
_ Transit use parking reduction..... 84 spaces
Total: 200 spaces (pg 5)

3.0 PARKING DEMAND ANALYSIS

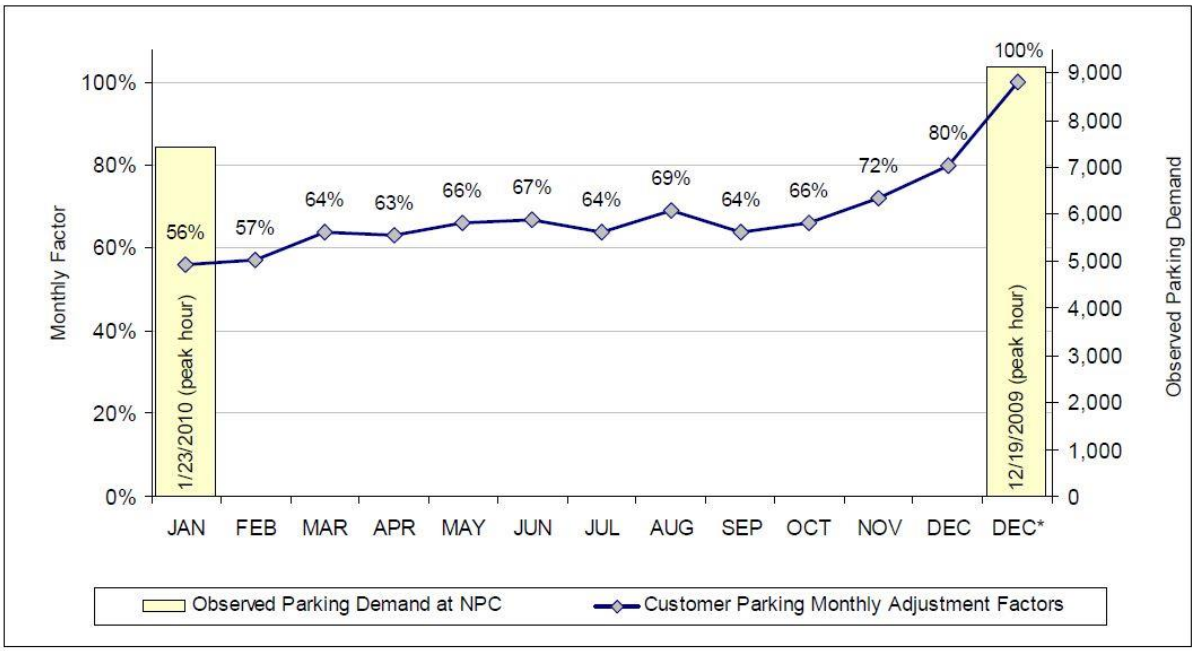
3.1 Industry Standards

The topic of parking needs for shopping centers is probably the most extensively researched within the traffic engineering community. Various technical publications, such as the Institute of Transportation Engineers (ITE)'s *Parking Generation* and the Urban Land Institute (ULI)'s *Shared Parking*, among others, propose the use of the 20th highest hour of parking demand in a year as an adequate design hour for a shopping center's parking needs. Studies performed by the ULI found that this industry standard is considerably higher than the 85th percentile of peak hours observed across all days of the year. In fact, parking demand ratios recommended by the ULI are based on an average of observed accumulations at over 169 centers during this design hour (rather than the 85th percentile). (source: *Shared Parking*, 2nd ed. (Washington, D.C. Urban Land Institute 2005) p. 45) As a result, it is considered acceptable that during 19 hours of a year, some customers are unable to find available parking spaces upon arrival at a shopping center. Also based on this industry standard, over half of the available spaces at NorthPark Center, with over 3,785 operating hours per year, are expected to be vacant during 40 percent of the year. The ULI has also empirically validated the 20th highest hour to occur during the second or third busiest hour on the second Saturday before Christmas (i.e., seven to 14 days before Christmas). (pg 5)

3.2 Seasonal Characteristics

Parking demands at shopping centers exhibit seasonal characteristics. The highest parking demand is expected to occur during the holiday season in December. A modest peak is also noticeable in August towards the end of the summer break. Several technical publications have analyzed seasonal variations for shopping centers. The Urban Land Institute (ULI), for example, studied data from the U.S. Census Bureau for calendar years 1999, 2000, 2001, and 2002. Findings of this study maintain that the parking needs during a number of days in December significantly exceed those observed throughout the rest of the year. ULI's recommended monthly factors for parking at shopping centers are depicted on Figure 1. (pg 6)

Figure 1. Seasonal Parking Characteristics



Source: Shared Parking, 2nd ed. (Washington, D.C.: Urban Land Institute 2005) and parking demand observed by DT&A in December 2009 and January 2010.

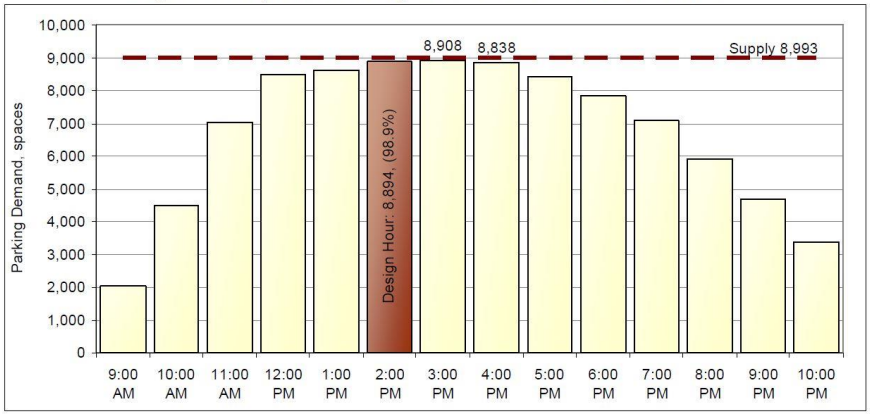
(pg 6)

Also shown in Figure 1 are recent parking demand accumulation data collected by DT&A at NorthPark Center on Saturday, December 19th, 2009 and Saturday, January 23, 2010. These parking accumulation data points represent peak parking demand characteristics in the month of December (a higher parking accumulation than the previously identified design hour for parking demand) and January, respectively. (pg 6)

3.5 Projected Parking Demand

Parking demand projections derived from the latest edition of the *DT&A Parking Demand Model for NorthPark Center* should continue to accurately reflect the design parking needs for NorthPark Center. (pg 9)

Figure 2. Projected Parking Demand for NorthPark Center



(pg 9)

Results of this parking demand model indicate a design parking need of 8,894 spaces to occur on the second Saturday before Christmas (i.e., seven to 14 days before Christmas).

DT&A recognizes that the parking demand at NorthPark Center during other 19 hours of the year (primarily during the Holiday season) is expected to exceed DT&A's parking projections for the proposed leasing schedule. This is an accepted industry standard acknowledged by the Urban Land Institute in *Shared Parking*, 2nd Edition. (pg 9)

3.6 Summary

Various technical publications propose the 20th highest hour of parking demand in a year as an adequate design hour for a shopping center's parking needs. The ULI has empirically validated the 20th highest hour to occur during the second or third busiest hour on the second Saturday before Christmas (i.e., seven to 14 days before Christmas).

The *DT&A Parking Demand Model for NorthPark Center* has been continually calibrated to reflect the parking needs for the shopping center based upon actual, on-site parking demand data collected during the 20th highest hour of the year per industry standards. As determined by the *DT&A Parking Demand Model for NorthPark Center*, the recommended parking design for NorthPark Center's ultimate building program is 8,894 parking spaces. Based on this industry standard, the existing parking supply of 8,993 spaces satisfies the projected parking needs for NorthPark Center and provides a surplus of 99 spaces. (pg 9)

4.0 PARKING SPECIAL EXCEPTION

(…)

4.1.2 Non-Destination Restaurants at NorthPark Center

Various restaurants at NorthPark Center currently classified as main use for Code parking requirement purposes may better represent accessory/limited use descriptions rather than those of a main use. (…) six restaurants located in the interior of the shopping center. They have neither direct access to the exterior public entrances of the building nor exterior advertising signs. The combined sum of their leased areas is 25,884 SF (approximately 1% of the gross building area). Compared to other main use restaurants at NorthPark Center, these tenants should not be considered destination restaurants (i.e., main use restaurants) during the design hour of parking needs for NorthPark Center (or the 20th highest hour of the year). These restaurants are an alternative for both employees as well as customers already at the shopping center, especially during the Christmas holiday season. As result, it is logical to assume that no customer goes to NorthPark Center with a primary purpose of eating at any of these restaurants during the 20th highest hour of the year. (pg 10)

DT&A proposes that these leasing areas, identified and adapted to satisfy building inspection standards for restaurant use, have a lower parking requirement than *one per 100 square feet of floor area*. The following table presents the recommended Code parking requirement for these restaurant areas. (pg 11)

Table 2. Parking Requirement for Non-Destination Restaurants

Suite & Restaurant Tenant	QTY	EXISTING (1 space/100 SF)* [A]	PROPOSED (1 space/200 SF)* [B]	Δ [A-B]
H2-1516 — La Duni	4,066 SF	36.6	18.3	**18**
H1-1608 — Café Cibus	5,760 SF	51.8	25.9	**26**
H2-2272 — TGIFridays	6,628 SF	59.7	29.8	**30**
B2-0207 — Corner Bakery	4,376 SF	39.4	19.7	**20**
C2-0628 — La Madeline	1,670 SF	15.0	7.5	**8**
H2-2276 — Vacant (formerly Starbucks)	3,384 SF	30.5	15.2	**15**
Totals:	25,884 SF	233.0	116.5	**116**
		Proposed Parking Special Exception *(Attributed to non-destination restaurants):*		**116 spaces**

**Calculations include provisions for Retail Mall (i.e., 10% reduction) identified in 51A-4.301(c)(7)*

(pg 11)

4.2 Transit Use Reduction

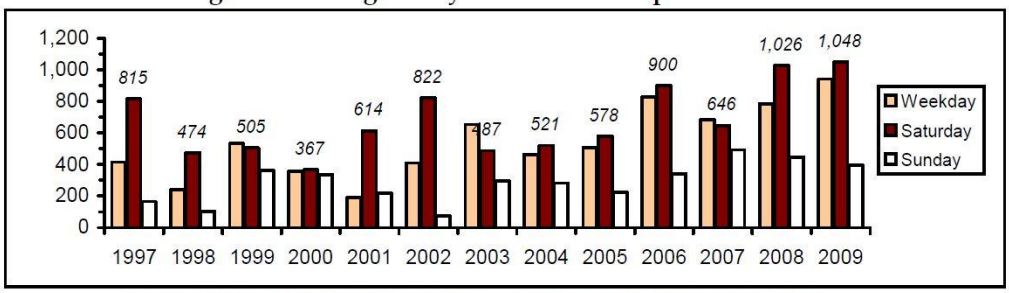
4.2.1 Available Transit Use Services

DART Park Lane Station is conveniently located across U.S. 75 from NorthPark Center. Park Lane Station is a multimodal facility providing regional access via DART's Rail Red Line, Bus Routes 428, 502 and 506, paratransit, and NorthPark Center Shuttle (Bus Route 702), which connects Park Lane Station to NorthPark Center. This shuttle service is partially financed by NorthPark Center and provides an attractive transportation alternative for many. (pg 11)

4.2.2 DART Ridership Data/Trends

The NorthPark Center Shuttle started operations in 1997. Since then, ridership demand has sporadically increased but continues to attract more employees and visitors. In order to empirically quantify transit use at NorthPark Center, ridership demand information was obtained from DART's Open Records. Data provided includes daily average and total ridership per month since 1997. The following figure summarizes average daily ridership in the month of December for the past three years. (pg 12)

Figure 3. Average Daily DART Ridership in December



Source: Dallas Area Rapid Transit – Open Records, January 26, 2010

(pg 12)

As illustrated above, the average ridership on a Saturday in December has increased each year in the past three years. It is noticeable that transit use continues to be an attractive alternative mode of transportation for many in the Dallas Metropolitan Area. In fact, DART continues to experience gains in regional ridership. DART's 2009 Board Chair Report announced an observed 5% increase in DART Rail in 2009 compared to 2008. Gas prices, economic instability and availability to transit should continue to encourage the use of

transit as a mode of transportation to NorthPark Center, primarily for employees and visitors from out of town. (pg 12)

4.2.3 Transit Use Reduction Rate

A *transit use reduction rate* (i.e., parking reduction factor) was calculated based on the average daily ridership recorded in 2009. DT&A recommends a transit reduction of 2.29% to the parking requirements for NorthPark Center. This reduction is based upon inbound cumulative ratios observed by DT&A at NorthPark Center and a conservative passenger occupancy of 1.5 persons per vehicle. (pg 12)

DT&A's recommended transit reduction of 2.29% represents 251 out of 10,987 parking spaces, […]. Considering an existing transit credit granted by the Board of Adjustment on February 18, 2004 of 167 parking spaces in lieu of the NorthPark Center Shuttle service, DT&A proposes an additional parking exception of 84 Code-required off-street parking spaces to acknowledge an empirically calculated transit use credit. (pg 13)

VALIDATION STUDY FOR NORTHPARK CENTER

Prepared for: NorthPark Management Company
Prepared by: DeShazo Group, Inc.
BDA 090-047
December 2013
(9 pages)

Introduction

The following report summarizes the results of a parking validation study for NorthPark Center as required by the conditions of the Parking Special Exception (BDA 090-047) granted by the City of Dallas Board of Adjustments, Panel B, on April 21, 2010. The specific conditions of the Special Exception are listed below:

- *The special exception of 2,018 spaces shall automatically and immediately terminate when and if the property is no longer used for office or retail and personal service uses as permitted in the subject site's RR (Regional Retail) zoning district; with the combination of those uses not to exceed 11,011 required parking spaces,*
- *The applicant or property owner must submit a parking analysis of the site to the Department of Sustainable Development and Construction Project Engineer no later than December 31, 2013. Should the parking analysis show any parking deficiency, the applicant or parking owner must immediately mitigate that deficiency as may be agreed between the applicant or property owner and the Department of Sustainable Development and Constructions, and*
- *The applicant or property owner must continue to maintain the existing DART shuttle between the shopping center and the DART rail station in the future. Failure by the applicant or property owner to maintain the DART shuttle service in the future will result in the loss of credit for 275 off-street parking spaces only.*

The purpose of this study is to validate that the parking needs at NorthPark Center are satisfied by the parking supply with implementation of the parking reduction. (pg 1)

Parking Supply

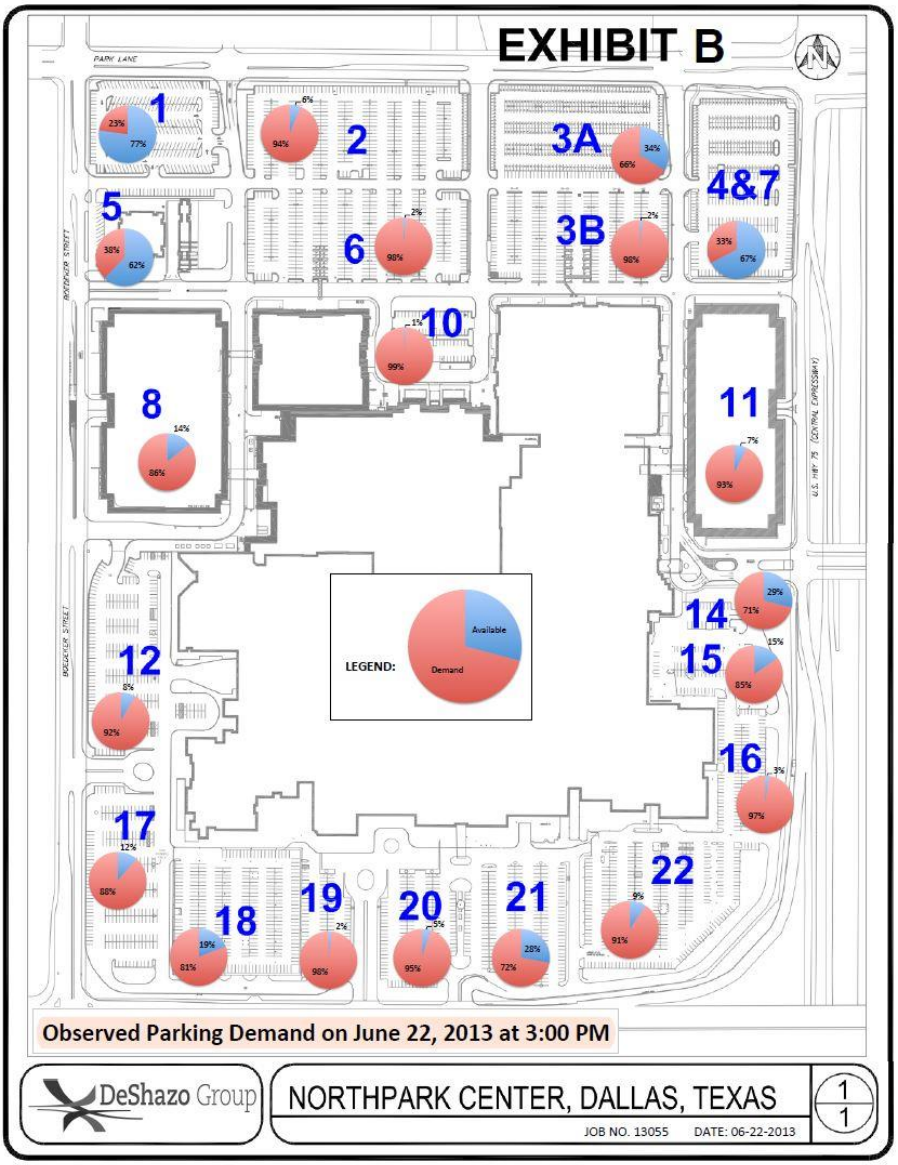
As part of the original parking study provided in support of the parking reduction, DeShazo field-verified the off-street parking supply of 8,993 spaces. As of December 2013, the parking supply at *NorthPark Center* remains unchanged at a total of 8,993 off-street parking spaces. (pg 2)

Parking Requirement

With a parking supply of 8,993 and a net parking requirement of 8,879, the site currently maintains a code surplus of 114 spaces. (pg 2)

Parking Demand

DeShazo conducted a comprehensive, on-site, parking accumulation study at *NorthPark Center* on Saturday, June 22, 2013 during the previously-determined peak parking demand period. The study revealed a total of 7,506 parked vehicles at 3:00 PM. (pg 2)



(pg 5)

CONCLUSION

This analysis indicates that the existing parking supply of 8,993 spaces exceeds the 8,879 spaces needed to meet the City of Dallas' adjusted parking requirement by 114 spaces. The parking supply also accommodates the peak demand of 7,506 spaces as observed on Saturday, June 22, 2013 at 3:00 PM with a surplus of 1,487 spaces (or 17 percent). Based on the resulting ample surplus, it is concluded that the subject site's parking special exception is validated. (pg 3)

PRESTON TRAIL VILLAGE PARKING ANALYSIS

Location: Northeast of Preston Road and Campbell Road
Building 177,049 sf
Prepared for: Lincoln PTV, Ltd.
Prepared by: DeShazo, Tang & Associates, Inc.
May 2006
(19 pages)

Existing Zoning: CR Community Retail; Parking per Chapter 51A

Background

The services of **DeShazo, Tang & Associates, Inc.** (DT&A) were retained by **Lincoln PTV, Ltd.** to analyze the parking needs for Preston Trail Village center. Preston Trail Village is a mixed-use center located on 17194 Preston Road— the northeast intersection with Campbell Road in Dallas, Texas. The

property is part of Lot 1A, City Block 8206 and it is currently zoned Community Retail "CR." Moreover, the center includes general and medical/dental offices as well as retail and personal service uses including dry-cleaners, a furniture store, a general food store (Kroger), general merchandise retail, and restaurant leasable area among others. (…) Approximately 25% of the 177,049 square feet of gross leasing area (SF GLA) at Preston Trail Village is currently vacant. However, modifications to the existing site plan are proposed in order to revitalize the mixed-use center.

This study summarizes the code parking requirement for the site and a projected parking demand based upon actual on-site observations. In addition, a parking demand model for Preston Trail Village is recommended based upon DT&A's professional judgment, published technical national data, and experience from prior parking studies. (page 1)

Code Parking Requirement

Table 1. City Code Parking Requirement Summary

USE	CITY OF DALLAS DEVELOPMENT CODE	QTY	PARKING CODE RATE (*1 space per*)	SCHEME A REQUIRED PARKING (*spaces*)	SCHEME B REQUIRED PARKING (*spaces*)
Office Uses					
Medical/Dental Office	4.207 (4)(C)	6,379 SF	200 SF	31.9	31.9
General Office Space	4.207 (5)(C)	2,541 SF	333 SF	7.6	7.6
Retail and Personal Service					
Dry-Cleaning Store	4.210 (11)(C)	4,577 SF	200 SF	22.9	22.9
Furniture Store	4.210 (12)(C)	19,133 SF	500 SF	38.3	38.3
General Merchandise[1]	4.210 (13)(C)	55,530 SF	200 SF	277.7	277.7
General Food Store	4.210 (14)(C)	63,576 SF	200 SF	317.9	317.9
Personal Service	4.210 (23)(C)	8,524 SF	200 SF	42.62	42.6
Restaurant w/o drive through[1]	4.210 (24)(C)	10,739 SF	100 SF	107.4	107.4
Restaurant w/ drive through	4.210 (25)(C)	5,950 SF	100 SF	59.5	59.5
Motor Vehicle Fuel Station[2]	4.210 (19)(C)	- -	[2 spaces]	N/A	2.0
TOTALs:		***177,049 SF***		**906 spaces**	**908 spaces**
			Parking Supply:	**848 spaces**	**828 spaces**
			Deficit:	**-58 spaces**	**-80 spaces**

Building Program Source: O'Brien & Associates, Inc. SitePlan-006 dated 03/20/2006
[1] Includes vacant suites designated for each use.
[2] Actual location is to be determined; location may impact parking supply.

(pg 2)

Parking Demand

Observed Parking Demand

DT&A conducted an on-site parking accumulation study on Friday, March 12, and Saturday, March 13, 2006. As previously stated, the property is currently 75% occupied. The parking accumulation counts reflect a considerable low parking demand utilization. The peak accumulation occurs on a Saturday at 1:00 PM when approximately 17% of the required spaces are occupied. Findings of this study are summarized as follows: (pg2)

Table 2. Observed Peak Parking Accumulation for *Preston Valley View Shopping Center*

DATE OF OBSERVATION	PEAK PARKING ACCUMULATION	% (906 SPACES)
Friday – *03/24/06*	140 spaces (11:00 AM)	15.5%
Saturday – *03/25/06*	150 spaces (1:00 PM)	16.6%

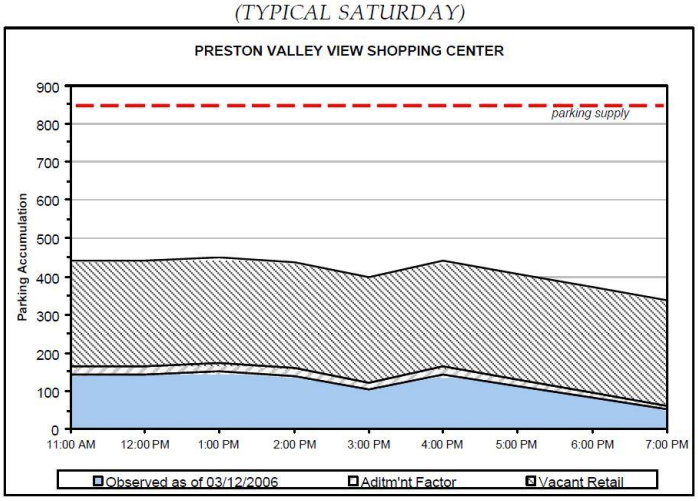
(pg 3)

DT&A acknowledges that City Code requirements do establish standards for the functional design of efficient parking facilities, thus reducing congestion and minimizing external effects on neighboring land uses, as stated in the *City of Dallas Development Code*. However, parking supply designed directly from the City Code does not consider actual parking observations exclusively associated to the study site. An oversupply of parking may result in negative aspects of excessive land area or resources devoted to parking (e.g. storm drainage impacts or maintenance of stalls that are never used). (pg 3)

Projected Parking Demand

The observed parking demand study at *Preston Trail Village* empirically justifies a lower parking demand than expected by direct application of City Code. Nonetheless, DT&A recognizes that *Preston Trail Village* may generate more parking under the proposed leasing conditions (i.e. fully occupied) as the shopping center becomes relatively more attractive. In order to account for the potential demand increase, a 10% increment was added to the observed parking demand. In addition to the *performance adjustment*, DT&A incorporates an additional 5% to the observed parking accumulation ? an *inefficiency factor* that accounts for a completely saturated parking lot in which patrons would encounter some difficulty searching for a last empty space. (pg 3)

Figure 1. Projected Peak Parking Accumulation
(TYPICAL SATURDAY)



(pg 4)

As previously mentioned, the projected parking demand is less than that required by City Code. Under a completely occupied retail center scenario, DT&A projects a peak parking demand of 437 vehicles on a typical Friday peak hour and 448 vehicles on a Saturday peak hour based upon existing parking accumulation at *Preston Trail Village* (25% vacant). (pg 4)

Supporting Technical Publication

Parking Requirements for Shopping Centers (1999) is a parking study prepared by the Urban Land Institute (ULI) that presents a set of base recommendations for parking supply in shopping centers based on the center size and the amount of entertainment uses within the premises (including restaurant). (pg 4) (…)

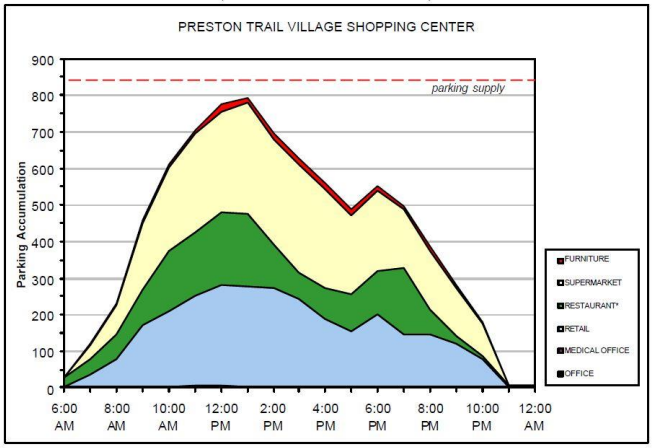
Table 3. ULI Recommendation for *Preston Trail Village*

CENTER GLA		PARKING RATE		RECOMMENDED PARKING
177,049 SF	*x*	*4.00 spaces / 1,000 SF*	=	**708.2 spaces**

(pg 4)

DT&A Shared Parking Model

Figure 2. DT&A Shared Parking Model
(TYPICAL SATURDAY)



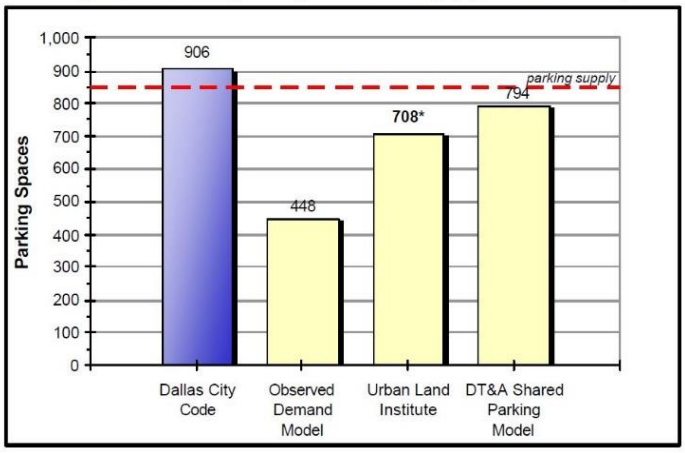
(pg 5)

As shown in **Figure 2**, a share parking analysis at *Preston Trail Village* yields a peak parking demand of 794 spaces during the hour of 1:00 PM on a peak Saturday. Similarly a less severe peak parking demand of 731 spaces is expected to occur at the same time during a typical weekday. (…) (pg 5)

Conclusion

This study summarizes the code parking requirement and the projected parking demand for the proposed modifications to the *Preston Trail Village* retail center. The code parking requirements were obtained directly from the Dallas Development Code Chapter 51A; the projected parking demands at full occupancy were derived from hourly on-site parking observations of the currently-occupied space, plus the code parking requirements for the remaining space superimposed. In addition, a parking demand model for *Preston Trail Village* was analyzed based upon DT&A's professional judgment and the ULI *Parking Requirements for Shopping Centers* (1999). The results of each of these parking models are summarized in **Figure 2**. (pg 6)

Figure 2. Parking Analysis Summary (w/o fuel station)



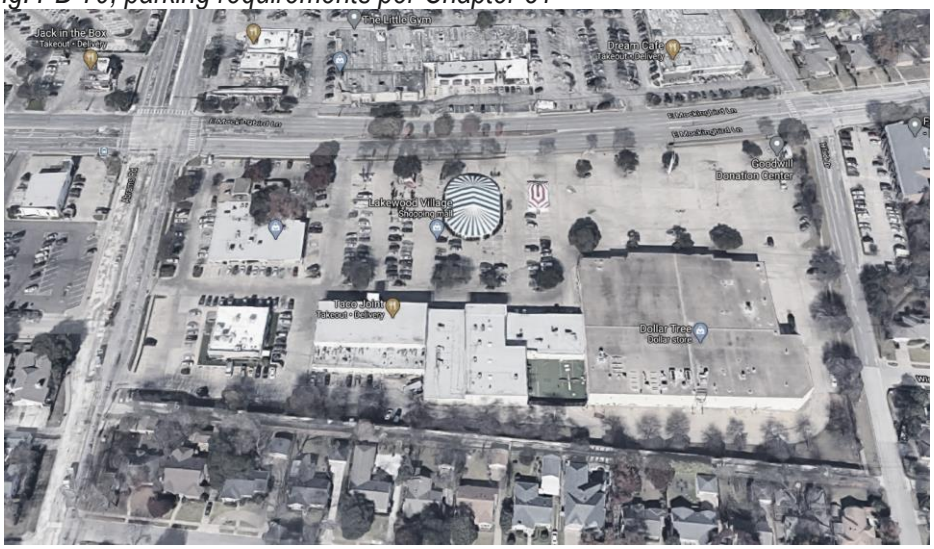
(pg 6)

At this point, DT&A recommends the following option to bring the retail center into compliance with the parking code: (1) increase the parking supply by redesigning some of the parking spaces on site, and (2) request a Parking Special Exception from the City of Dallas Board of Adjustments. In such case, DT&A would plan to use the ULI parking projection of 708 spaces for *Preston Trail Village* as the primary basis for the request (supported by the low utilization of existing parking observed on site). (pg 6)

LAKEWOOD VILLAGE SHOPPING CENTER PARKING ANALYSIS

Location: Southeast of Mockingbird Lane and Abrams Lane
Acres 10.2 ; Building: 111,957 sf
Prepared for: …..
Prepared by: Christy Lambeth / Lambeth Engineering Associates
November 2019
(21 pages)

Existing Zoning: PD 79, parking requirements per Chapter 51



Introduction
The services of Lambeth Engineering Associates, PLLC (herein Lambeth) were retained to conduct a parking analysis for the Lakewood Village Shopping Center located southeast of the Mockingbird Lane/Abrams Lane intersection in Dallas, Texas.

Lakewood Village is a longstanding shopping center with a mix of retail, restaurant, office and other uses that serve the surrounding community. ASI Gymnastics was vacant at the onset of this study but is now open for business. There are currently four (4) vacant suites: a former restaurant in a standalone building, a former retail suite upstairs, a potential retail suite next to ASI Gymnastics and a potential fitness center next to ASI Gymnastics.

The property is zoned Planned Development (PD) 79, which requires parking based on an ordinance which preceded Chapter 51A. (…) As shown in this analysis, this site provides sufficient parking for existing and planned uses. Lambeth projects a peak period demand of 410 parking spaces under fully-occupied conditions. Based upon recommendations in this analysis, the site would require 527 parking spaces. The property is currently designed to provide 636 parking spaces with the new drive-thru restaurant. (pg 1) (…)

Parking Supply
The on-site parking supply is currently 659 spaces. The planned parking supply with the proposed 4,634 SF drive-thru restaurant is 636 spaces.

Parking Observations
In order to determine the parking demand for the existing tenants and validate this parking analysis, Lambeth conducted parking observations over four days at the Lakewood Village Shopping Center: two Fridays (May 10, 2019 and June 28, 2010) and two Saturdays (May 4, 2019 and June 29, 2019). Fridays were observed as a peak weekday to capture restaurant demands and Saturdays were observed to capture weekend retail demands. During the first Friday/Saturday observations, ASI Gymnastics was not open for business and Savory Chiropractic was temporarily closed. During the second Friday/Saturday observations, ASI Gymnastics and Savory Chiropractic were both open. The peak observed parking demand of 194 parking spaces occurred on a Friday evening. (pg 1)

Table 2. Current PD 79 Code Parking Requirement for Proposed Development Program

Existing Tenants and Proposed Uses	SF	Use	Ordinance 10962 (As required per PD 79)	
			Parking Ratio	Spaces Req'd
Vacant - Restaurant	4,634	Restaurant	1 space/ 100	46.3
Sherwin Williams	3,430	Retail	1 space/ 200	17.2
Nail Expertise	1,550	Personal Service	1 space/ 200	7.8
Total Hearing Care	1,500	Retail	1 space/ 200	7.5
Personal Touch Cleaners	1,020	Personal Service	1 space/ 200	5.1
Poke Bop	1,750	Restaurant	1 space/ 100	17.5
The Taco Joint	3,200	Restaurant	1 space/ 100	32.0
Utopia Food & Fitness	2,000	Retail	1 space/ 200	10.0
Creation Station Dance	1,600	Personal Service (Instructional Arts Studio)	1 space/ 200	8.0
Bodega	1,613	Restaurant	1 space/ 100	16.1
Ginger Thai	1,360	Restaurant	1 space/ 100	13.6
Lovers Pizza & Pasta	1,400	Restaurant	1 space/ 100	14.0
Savoy Chiropractic	1,000	Medical Clinic	1 space/ 150	6.7
Allstate Insurance	750	Office	1 space/ 300	2.5
Pilates Unlimited	2,236	Personal Service (Instructional Arts Studio)	1 space/ 200	11.2
Vacant - Retail	1,997	Retail	1 space/ 200	10.0
Better Homes & Gardens	1,005	Office	1 space/ 300	3.4
Dee's Doggie Den	13,970	Animal Shelter or Clinic	1 space/ 300	46.6
Lakewood Growler	1,250	Retail	1 space/ 200	6.3
Jackson Hewitt Tax Service	1,250	Office	1 space/ 300	4.2
Dirty Dawgz	800	Retail	1 space/ 200	4.0
Merle Norman Cosmetic Studio	450	Retail	1 space/ 200	2.3
The Hive Salon	1,250	Personal Service (Beauty Shop)	1 space/ 200	6.3
ASI Gymnastics	20,009	Personal Service (Instructional Arts Studio)	1 space/ 200	100.0
Vacant - Fitness Center	27,392	Personal Service (Health Studio)	1 space/ 150	182.6
Vacant - Retail	11,269	Retail	1 space/ 200	56.3
Subway and TCBY	2,272	Restaurant	1 space/ 100	22.7
Total:	**111,957**		Total:	660.0

(pg 3)

Table 3. Recommended Parking Ratios

Use	SF	Recommended Parking Ratios	
		Parking Ratio	Spaces Req'd
Office	3,005	1 space/ 366	8.2
Medical Office	1,000	1 space/ 200	5.0
Retail < 10,000 SF	10,627	1 space/ 200	53.1
Retail 10,000+ SF	11,269	1 space/ 220	51.2
Personal Service	8,456	1 space/ 200	42.3
Animal Shelter or C	13,970	1 space/ 500	27.9
Restaurant	16,229	1 space/ 100	162.3
Health Studio	27,392	1 space/ 200	137.0
Gymnastics Center	20,009	1 space/ 200	100.0
Total:	**111,957**	**Total Spaces Req'd:**	**587.1**

Red text denotes changes that were made to current 51A requirements.

(pg 6)

Summary

PD 79 currently requires 660 parking spaces for the shopping center's development program. Based upon recommended parking ratios in this analysis, 587 parking spaces are required for the shopping center. Applying the recommended Mixed-Use Development (MUD) Chart time-of-day parking demand percentages, the **recommended parking requirement is 527 spaces**, which occurs on a weekday evening.

The projected parking demand for the proposed building program is 412 and 374 parking spaces on a weekday and weekend, respectively. Therefore, the proposed parking 527-space requirement exceed the projected demand.

Below is a summary of the parking changes presented for the new PD.

- Office: 1 space per 366 SF and use time-of-day percentages currently on the MUD Chart.
- Personal Service: 1 space per 200 SF (same as 51A) and add note on MUD Chart specifying personal service uses have the same time- of-day percentages as retail, in order to have consistent title with Section 51A-4.210.
- Animal Clinic: 1 space per 500 SF and add time-of-day percentages to MUD Chart.
- Health Studio: 1 space per 200 SF (same as 51A) and update time-of-day percentages on MUD Chart.
- Gymnastics: 1 space per 200 SF (same as 51A) and add time-of-day percentages to MUD Chart.

(pg 8)

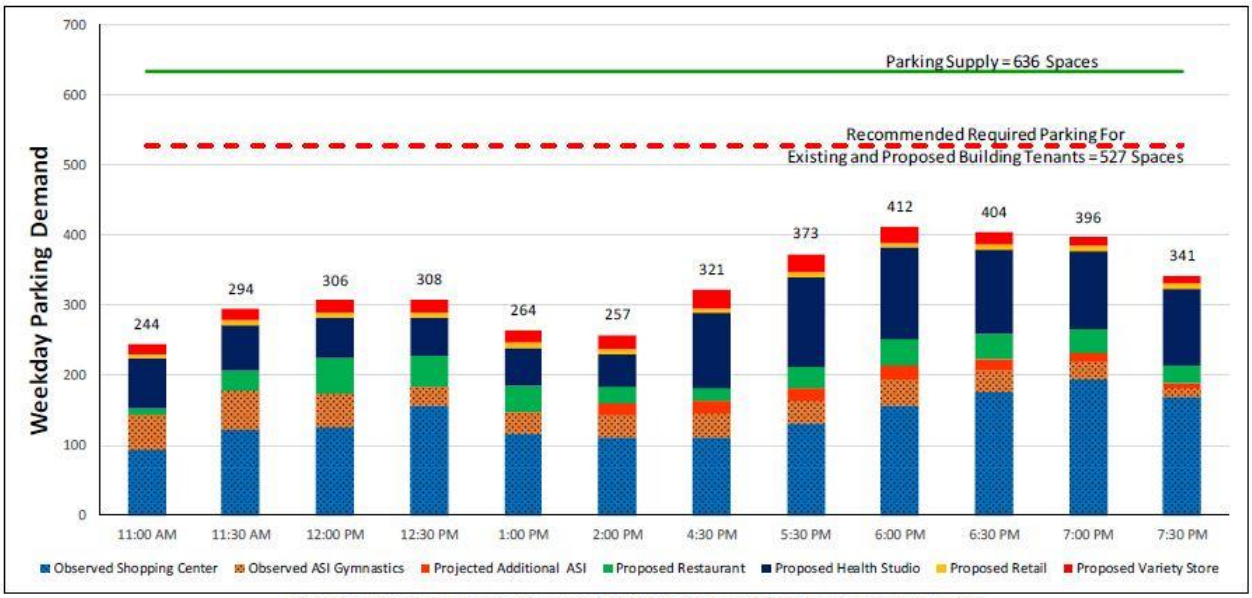


Figure 2. Weekday Peak Observed Parking Demand for Existing Tenants and Projected Parking Demand for Vacant Tenants

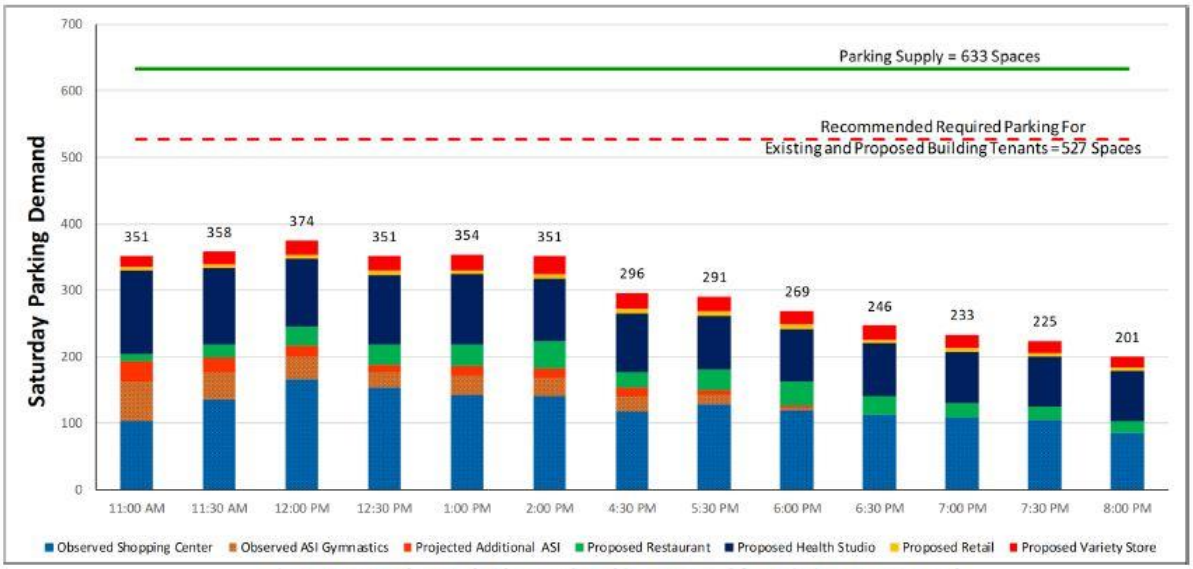


Figure 3. Saturday Peak Observed Parking Demand for Existing Tenants and Projected Parking Demand for Vacant Tenants

(pg 9)

MOCKINGBIRD/ABRAMS SHOPPING CENTER PARKING ANALYSIS

Location: southwest of E Mockingbird Ln and Abrams Rd
Acres 2.5 ; Building: 8,250 sf
Prepared by: DeShazo Group
June 2011
(2 pages, excerpt from a Parking Analysis)

Existing Zoning: CR Community Retail, parking requirements per Chapter 51A

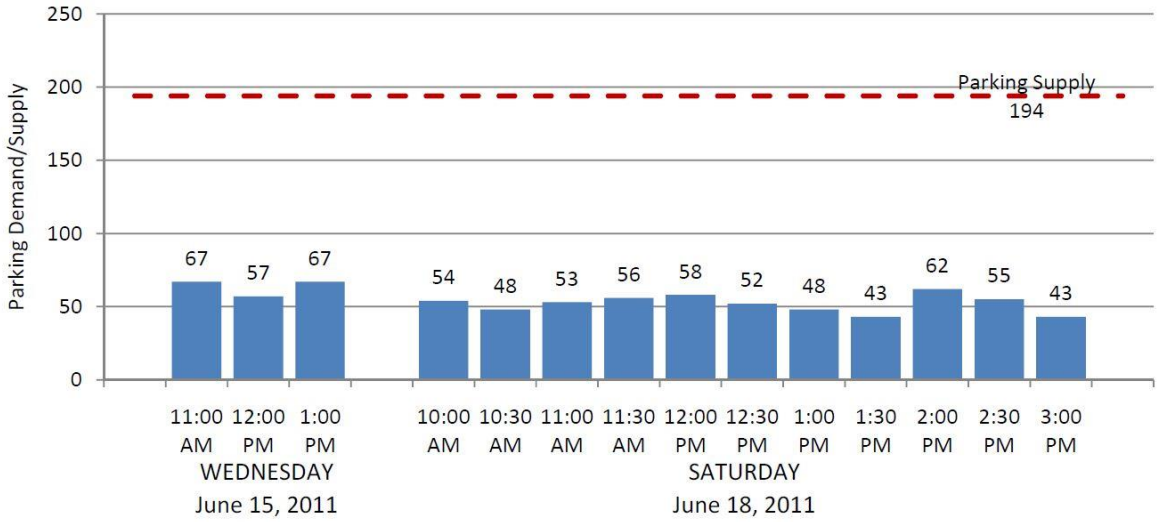


TABLE 1. Existing Conditions

SUITE	TENANT	LAND USE	AMOUNTS		PKG RATE 1 space per	TOTAL REQUIRED
6330-6350 Mockingbird Lane						
6350	Prima Care	Medical Clinic	3,754	SF	*200 SF*	18.8
4107	Lakeside Cleaners	Dry Cleaning/Laundy Store	902	SF	*200 SF*	4.5
4117	Kwik Wash	Dry Cleaning/Laundy Store	3,038	SF	*200 SF*	15.2
4127	Royal Dental Center	Medical Clinic	1,575	SF	*200 SF*	7.9
6330	JoAnn Fabrics	General Merchandise	9,384	SF	*200 SF*	46.9
6322	Canine Commissary	General Merchandise	8,575	SF	*200 SF*	42.9
					Total Minimum Parking Requirement:	***136***
					Off-Street Parking Supply:	***142***
					Surplus/(Deficit):	*6 spaces*
6310 Mockingbird Lane						
6320	Vacant	General Merchandise	5,901	SF	*200 SF*	29.5
6310	Chase Bank	Bank	5,936	SF	*333 SF*	17.8
					Total Minimum Parking Requirement:	***47***
					Off-Street Parking Supply:	***52***
					Surplus/(Deficit):	*5 spaces*

net req'd:	***183***
net supply:	***194***
net surplus:	***11***

TABLE 2. Proposed Conditions

SUITE	TENANT	LAND USE	AMOUNTS		PKG RATE 1 space per	TOTAL REQUIRED
6330-6350 Mockingbird Lane						
6350	Prima Care	Medical Clinic	3,754	SF	*200 SF*	18.8
4107	Lakeside Cleaners	Dry Cleaning/Laundy Store	902	SF	*200 SF*	4.5
4117	POTENTIAL RESTAURANT	Restaurant w/o Drive Thru	3,038	SF	*100 SF*	30.4
4127	POTENTIAL RESTAURANT	Restaurant w/o Drive Thru	1,575	SF	*100 SF*	15.8
6330	JoAnn Fabrics	General Merchandise	9,384	SF	*200 SF*	46.9
6322	Canine Commissary	General Merchandise	8,575	SF	*200 SF*	42.9
					Total Minimum Parking Requirement:	***159***
					Off-Street Parking Supply:	***142***
					Surplus/(Deficit):	*-17 spaces*
6310 Mockingbird Lane						
6320	Vacant	General Merchandise	5,901	SF	*200 SF*	29.5
6310	Chase Bank	Bank	5,936	SF	*333 SF*	17.8
					Total Minimum Parking Requirement:	***47***
					Off-Street Parking Supply:	***52***
					Surplus/(Deficit):	*5 spaces*

net req'd:	***207***
net supply:	***194***
net deficit:	***-13***

VILLAGE AT PRESTON HALLOW PARKING ANALYSIS

Location: Northeast of Northwest Highway and Midway
Building: 89,901 sf
Prepared by: DeShazo Group
February 2013
(6 pages)

Existing Zoning: PD 70, parking requirements per Chapter 51A

Code Parking Requirement for

VILLAGE AT PRESTON HOLLOW

in accordance with PD 70

DeShazo Group - Project No. 11132.04

Existing Conditions

Table 1A. Current Rent Roll Summary (by Land Use)

LAND USE	AMOUNT	RATE *1 space per*	DIRECT REQUIREMENT
Office	3,829 SF	333	11
Medical Clinic	3,835 SF	200	19
Retail and Personal Service	55,407 SF	200	277
Bar and Restaurant	26,830 SF	100	268
TOTALS:	**89,901 SF**		**575**

Table 1B. Parking Requirements per PD 70 - Mixed Use Development Parking Reduction

LAND USE	DIRECT REQUIREMENT	MORNING	NOON	AFTERNOON	LATE AFTERNOON	EVENING
Office Related Uses	30 spaces	100%	80%	100%	85%	35%
		30	24	30	26	11
Retail and Personal Service	277 spaces	60%	75%	70%	65%	70%
		166	208	194	180	194
Bar and Restaurant	268 spaces	20%	100%	30%	30%	100%
		54	268	80	80	268
All Other	0 spaces	100%	100%	100%	100%	100%
		0	0	0	0	0
TOTALS:	**575**	**250**	**500**	**304**	**286**	**473**

Proposed Leasing Changes:

Baskin Robbins	-- SF	*(already included as VACANT RESTAURANT in existing rent roll)*
Fernando's	+ 902 SF	*(from existing area currently classified as Personal Service)*
Original Pancake House	+ 838 SF	*(from existing area currently classified as Personal Service)*

Table 2A. Proposed Rent Roll Summary (by Land Use)

LAND USE	AMOUNT	RATE *1 space per*	DIRECT REQUIREMENT
Office	3,829 SF	333	11
Medical Clinic	3,835 SF	200	19
Retail and Personal Service	53,667 SF	200	268
Bar and Restaurant	28,570 SF	100	286
TOTALS:	**89,901 SF**		**584**

Table 2B. Parking Requirements per PD 70 - Mixed Use Development Parking Reduction

LAND USE	DIRECT REQUIREMENT	MORNING	NOON	AFTERNOON	LATE AFTERNOON	EVENING
Office Related Uses	30 spaces	100%	**80%**	100%	85%	35%
		30	**24**	30	26	11
Retail and Personal Service	268 spaces	60%	**75%**	70%	65%	70%
		161	**201**	188	174	188
Bar and Restaurant	286 spaces	20%	**100%**	30%	30%	100%
		57	**286**	86	86	286
All Other	0 spaces	100%	**100%**	100%	100%	100%
		0	**0**	0	0	0
TOTALS:	**584**	**248**	**511**	**304**	**286**	**485**

(pg 4)

Technical Memorandum
April 2017

This analysis incorporates the relocation of existing tenants and elimination of twelve parking spaces needed to accommodate the planned design of a new grocery store. The property is subject to zoning regulations stipulated in Section 51A and Planned Development (PD) District 70, Chapter 51P of the Dallas City Code.

Conclusion

The off-street parking supply of 573 spaces satisfies the City of Dallas Code parking requirement of 452 spaces and provides a surplus of 121 spaces.

Table 1. Parking Requirement for Village at Preston Hollow

Land Use	Amount	Rate *(1 space per)*	Direct Required	Mixed-Use Reductions				
				Morning	Noon	Afternoon	Late Afternoon	Evening
General Office	2,925 SF	333 SF	9	*100%* 9	***80%*** **7**	*100%* 9	*85%* 8	*35%* 3
Medical Clinic	3,835 SF	200 SF	19	*100%* 19	***80%*** **15**	*100%* 19	*85%* 16	*35%* 7
Retail (<10kSF)	13,428 SF	200 SF	67	*60%* 40	***75%*** **50**	*70%* 47	*65%* 44	*70%* 47
Retail (>40kSF)	50,181 SF	250 SF	201	*60%* 121	***75%*** **151**	*70%* 141	*65%* 131	*70%* 141
Animal Clinic	2,567 SF	300 SF	9	*60%* 5	***75%*** **7**	*70%* 6	*65%* 6	*70%* 6
Bar/Restaurant	22,235 SF	100 SF	222	*20%* 44	***100%*** **222**	*30%* 67	*30%* 67	*100%* 222
TOTAL:	**95,171 SF**		527	238	**452**	289	272	426

(pg 1)

THE HILL PARKING CODE MEMO

Location: Northeast of Walnut Ln and North Central Expressway
Acres 19.23; Building: 275,100 sf
Prepared by: DeShazo Group
October 2015
(12 pages)

Existing Zoning: Regional Retail (RR), Mixed Use (MU-1) and Planned Development District (PD) 804, parking requirements per Chapter 51A

SITE DESCRIPTION

The development includes a combined total of 275,100 square feet of mixed use on a 19.23-acre site. It comprises two properties legally described as part A and B of City Block 5459. Because the properties are independently platted, each one is required to meet its corresponding minimum City Code standards. The physical addresses are 9810 North Central Expressway and 8021 Walnut Hill Lane. The site is also partially zoned as Regional Retail (RR), Mixed Use (MU-1) and Planned Development District (PD) 804. However, the entire development is subject to direct application of the parking requirements stipulated in Chapter 51A of the Dallas Development Code. The proposed leasing program includes retail, personal service, restaurant, office and medical clinic tenants.

PARKING SUPPLY

The subject properties provide a combined total of 1,080 off-street parking spaces before considering for any remote parking. However, spaces obstructed by the line dividing both properties do not comply with City Code because either the spaces or their required maneuvering aisle are obstructed by a property line. In addition, all code-compliant spaces must be located on the same property as the use that it serves. A *shared access easement agreement* between both properties is hence necessary for all the planned

parking supply to comply with code standards and count towards the code parking requirements for its respective property. (pg 1)

Table 2A. Direct Code Parking Requirement for
9801 N. Central Expressway (Block B/5459, a part of The Hill)

Land Use Category	City Code *Chapter 51A*	Floor Area [A]	Parking Rate	PARKING
Medical Clinic	4.207(4)	15,440 SF	200 SF	77.2
Office [C]	4.207(5)	42,234 SF	333 SF	126.8
Animal Clinic	4.210(b)(2)	4,880 SF	300 SF	16.3
General Merchandise	4.210(b)(13)	49,017 SF	200 SF	245.1
Home Improvement	4.210(b)(15)	26,600 SF	275 SF	96.7
Personal Service [B]	4.210(b)(23)	6,191 SF	200 SF	31.0
Restaurant	4.210(b)(24)	17,739 SF	100 SF	177.4
Totals:		**162,101 SF**		**770**
			Parking Supply:	558
			Surplus/(Deficit):	**(212)**

[A] *Source: In-House Lease Plan provided by Cypress Equities on September 16, 2015 (see Appendix)*
[B] *Classified business school per CO #110318 but considered personal service use per City staff's advice*
[C] *Amount includes 9,475 SF of common floor area*

Table 2B. Direct Code Parking Requirement for
8021 Walnut Hill Lane (Block A/5459, a part of The Hill)

Land Use Category	City Code *Chapter 51A*	Floor Area [A]	Parking Rate	PARKING
Medical Clinic	4.207(4)	38,485 SF	200 SF	192.4
General Merchandise	4.210(b)(13)	38,500 SF	200 SF	192.5
Restaurant	4.210(b)(24)	36,014 SF	100 SF	360.1
Totals:		**112,999 SF**		**745**
			Parking Supply:	522
			Surplus/(Deficit):	**(223)**

[A] *Source: In-House Lease Plan provided by Cypress Equities on September 16, 2015 (see Appendix)*

(pg 2)

The City Code provides default parking requirements for specific uses in order that all uses may operate in compliance with the City regulations. These requirements establish standards for the functional design of efficient parking facilities, reduce congestion and minimize external effects on neighboring properties; however, parking supply designed directly from city codes does not comprehensively consider shared parking opportunities inherent to mixed use developments.
For this purpose, the City also presents opportunities to reduce direct code requirements, where applicable. (pg 3)

MUD Chart
Administrative parking reduction
Bicycle parking reduction
Remote parking agreement
BDA exception

(pg 3)

Table 3A. Summary of Adjusted Code Parking Requirement for *The Hill at 9810 N Central Expwy (Block B/5459)*

Pending Documentation of Each Reduction with the Dallas County Records

Land Use Category	City Code *Chapter 51A*	Floor Area [A]	Parking Rate	Direct Parking Req.	Parking Adjustment [B] WEEKDAY NOON	Parking Adjustment [B] Parking	Admin [C] Reduction	Total Parking
Medical Clinic	4.207(4)	15,440 SF	200 SF	77.2	80%	61.8	20%	**49.4**
Office	4.207(5)	42,234 SF	333 SF	126.8	80%	101.5	20%	**81.2**
Animal Clinic	4.210(b)(2)	4,880 SF	300 SF	16.3	75%	12.2	20%	**9.8**
Retail	4.210(b)(13)	55,208 SF	200 SF	276.0	75%	207.0	20%	**165.6**
Home Improvement	4.210(b)(15)	26,600 SF	275 SF	96.7	75%	72.6	20%	**58.0**
Restaurant	4.210(b)(24)	17,739 SF	100 SF	177.4	100%	177.4	--	**177.4**
Totals:		162,101 SF		770		632		**541**
							Bicycle Parking Reduction: [D]	(4)
							On-Site Parking Supply: [E]	558
							Total Surplus/(Deficit):	**21**

[A] *Source: In-House Lease Plan provided by Cypress Equities on September 16, 2015 (see Appendix)*
[B] *Pending execution of multi-use shared parking agreement (see Exhibit A and Item 1 above)*
[C] *Pending City staff's approval of the administrative parking reduction (see Item 2 above)*
[D] *Assumes a minimum of 24 bicycle racks on site compliant to §51A4.314 (See Item 3 above)*
[E] *Pending execution of shared access easement agreement (See Table 1)*

Table 3B. Summary of Adjusted Code Parking Requirement for *The Hill at 8021 Walnut Hill Ln. (Block A/5459)*

Pending Documentation of Each Reduction with the Dallas County Records

Land Use Category	City Code *Chapter 51A*	Floor Area [A]	Parking Rate	Direct Parking Req.	Parking Adjustment [B] WEEKDAY NOON	Parking Adjustment [B] Parking	Admin [C] Reduction	Total Parking
Medical Clinic	4.207(4)	38,485 SF	200 SF	192.4	80%	153.9	20%	**123.2**
General Merchandise	4.210(b)(13)	38,500 SF	200 SF	192.5	75%	144.4	20%	**115.5**
Restaurant	4.210(b)(24)	36,014 SF	100 SF	360.1	100%	360.1	--	**360.1**
Totals:		112,999 SF		745		658		**599**
							Bicycle Parking Reduction: [D]	(4)
							On-Site Parking Supply: [E]	522
							Remote Parking Supply: [F]	73
							Total Surplus/(Deficit):	**0**

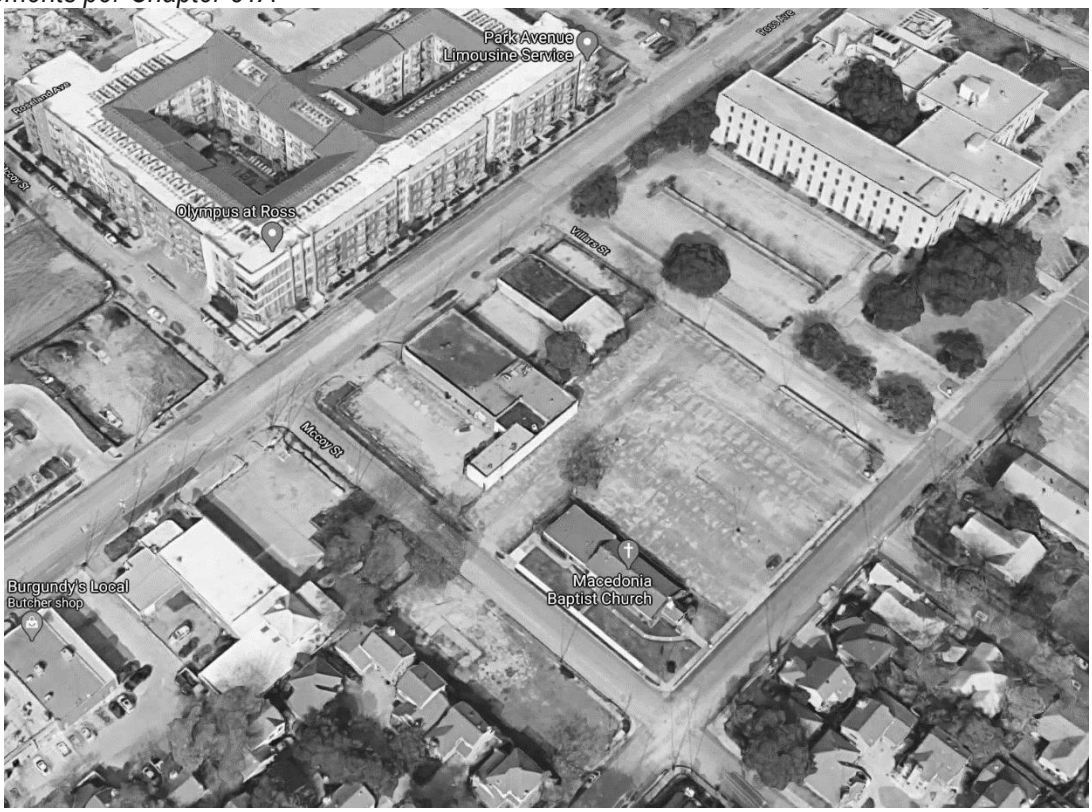
[A] *Source: In-House Lease Plan provided by Cypress Equities on September 16, 2015 (see Appendix)*
[B] *Pending execution of multi-use shared parking agreement (see Exhibit A and Item 1 above)*
[C] *Pending City staff's approval of the administrative parking reduction (see Item 2 above)*
[D] *Assumes a minimum of 24 bicycle racks on site compliant to §51A4.314 (See Item 3 above)*
[E] *Pending execution of shared access easement agreement (See Table 1)*
[F] *Pending execution of remote parking agreement (See Items 4, 5 and 6, including 21-space surplus from Table 3A)*

(pg 4)

SHOPPING CENTER PARKING ANALYSIS

Location: East of the Ross Avenue and McCoy Street
Building: 8,250 sf
Prepared for: Gideon Interests, Inc.
Prepared by: Christy Lambeth / Lambeth Engineering Associates
February 25, 2020
(16 pages)

Existing Zoning: PD 298 Subarea A (Bryan Area Special Purpose District, Lower Ross Area), parking requirements per Chapter 51A



Introduction

The services of Lambeth Engineering Associates, PLLC, (herein Lambeth) were retained to conduct a parking analysis for 3510 Ross Avenue located northeast of the Ross Avenue/McCoy Street intersection in Dallas, Texas. The site currently has a vacant building. The prior tenant was a wholesale florist. The site will be redeveloped, and the existing building will be renovated.

The purpose of this study is to project the parking demand for the site considering the planned uses and determine whether the requested parking reduction will provide adequate parking supply. As shown in this analysis, the development is projected to provide sufficient parking taking into consideration a 10-space parking reduction based upon parking rates published in the Institute of Transportation Engineers' (ITE) *Parking Generation Manual*, 5th Edition, parking observations conducted in the area, and the site's location with close proximity to over 1,900 homes. Therefore, approval of the 10-space parking special exception is recommended. (pg 1)

Parking Supply

The site is planned to have 31 on-site parking spaces and two (2) on-street, indented, parallel parking spaces on Ross Avenue for a total of 33 spaces on-site and adjacent to the site. However, parallel parking adjacent to the property does not apply towards code parking requirement in PD 278. Therefore, only 31 spaces would satisfy the City of Dallas parking code requirement. (pg 2)

Parking Observations

Lambeth Engineering conducted parking observations over three days at sites along Ross Avenue which have similar uses as those planned for the project site and were within a half mile of the site. Two shopping centers were observed; both contained a mix of uses. Shopping Center #1 included a variety of both personal service and general merchandise uses. Shopping Center #2 included a dry cleaner, office, and two different personal service uses: a health studio and hair salon. Since a health studio has a high parking demand of the potential personal service uses, a stand-alone health studio near the site was observed. Observations were also conducted at a nearby medical office building, CVS, and a florist.

It is important to note that although the shopping centers and the health studio observed are within a half mile of the site, they are not surrounded by as much dense residential development as the subject site. Therefore, the actual parking demand rate for the site is expected to be less than the observed parking rates.

Parking counts were collected on Monday, February 3, 2020, Friday, February 7, 2019, and Saturday, February 8, 2019. The weather was clear and sunny during observations. (pg 5)

Table 1. Parking Observation Summary

Study Site	Cross Streets	Address	Use	Size (SF)	Req'd Parking Ratio	Parking Spaces Required	Parking Req'd Per Study Site Site	Peak Observed Parking Demand	Observed Pkg Rate (1 space per X SF)
CVS	Ross Ave. at N. Haskell Ave.	4202 Ross Ave.	Retail > 3,500 SF	11,952	1 space per 220 SF	54.3	54	17	703
Shopping Center #1	Ross Ave. at N. Haskell Ave.	4101 Ross Ave.		7,230		36.2	36	26	278
5 Star Salon and Spa			*Personal Service*	*1,300*	*1 space per 200 SF*	*(6.5)*			
Little Caesars			*Retail < 3,500*	*1,430*	*1 space per 200 SF*	*(7.2)*			
Cell Phone Repair			*Retail < 3,500*	*1,400*	*1 space per 200 SF*	*(7.0)*			
Mimy's Studio Salon			*Personal Service*	*800*	*1 space per 200 SF*	*(4.0)*			
Glo Beauty Bar			*Personal Service*	*2,300*	*1 space per 200 SF*	*(11.5)*			
AllCare Clinic	Ross Ave. at Caddo St.	3825 Ross Ave.	Medical Clinic	3,137	1 space per 200 SF	15.7	16	12	261
Shopping Center #2	Ross Ave., S. of Caddo St.			7,381		32.7	33	18	410
Classic Cleaners		*3811 Ross Ave.*	*Dry Cleaners*	*1,696*	*1 space per 200 SF*	*(8.5)*			
Hair N Color		*3815 Ross Ave.*	*Personal Service*	*968*	*1 space per 200 SF*	*(4.8)*			
Atlas Credit Loans		*3819 Ross Ave.*	*Office*	*1,200*	*1 space per 366 SF**	*(3.3)*			
Dallas Fit Body Boot Camp		*3821 Ross Ave.*	*Personal Service*	*3,219*	*1 space per 200 SF*	*(16.1)*			
It's Your Florist	Ross Ave. at N. Washington Ave.	3801 Ross Ave.	Gen Merch < 3,500 SF	2,100	1 space per 200 SF	10.5	11	3	700
Cross Fit 24 - Ross	Ross Ave. at N. Peak St.	4226 Ross Ave.	Personal Service	7,100	1 space per 200 SF	35.5	36	32	222

*PD 298 , Subarea 1: Office Parking 1/366 SF

(pg 5)

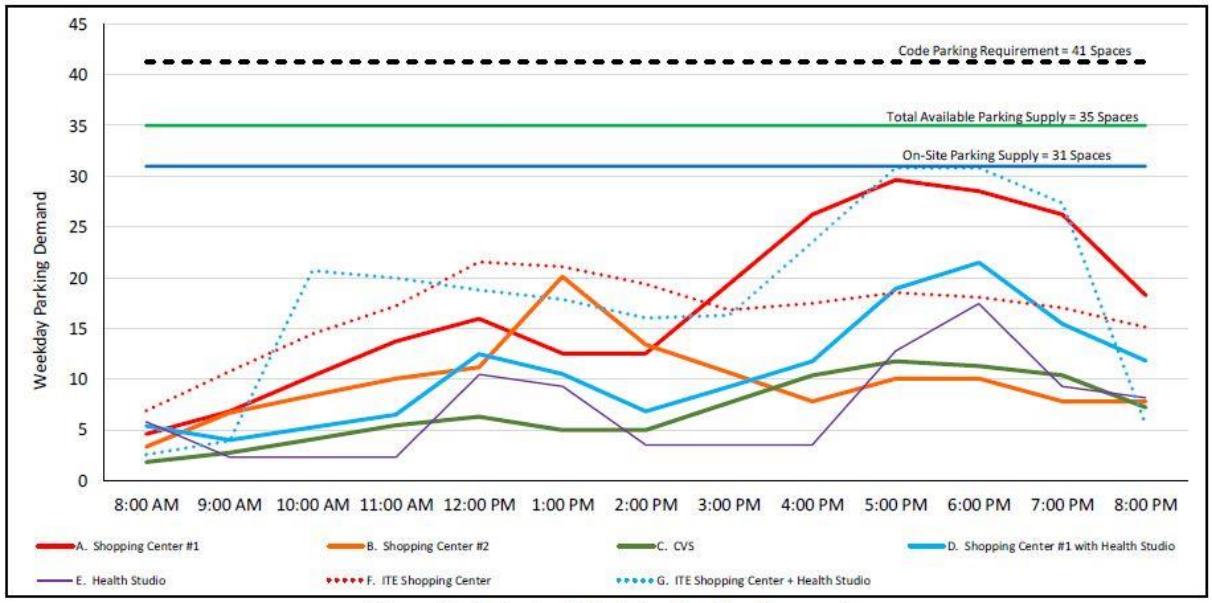


Figure 4. Projected Weekday Parking Demand

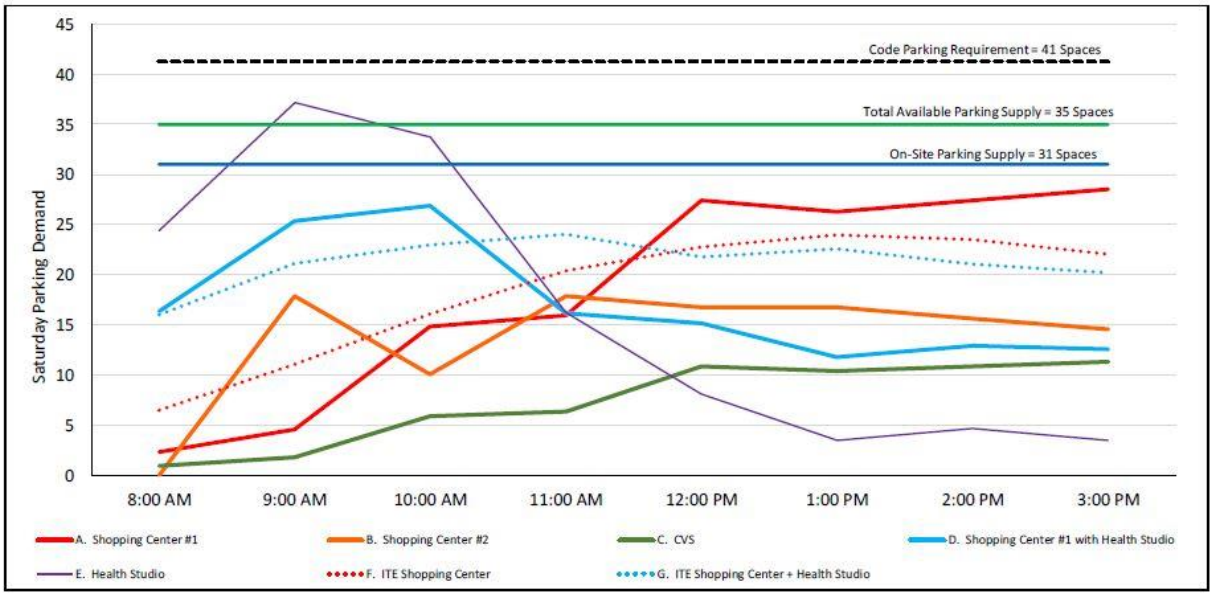


Figure 5. Projected Saturday Parking Demand

(pg 8)

Single Use

Introduction

Single use parking studies ascertain the needs for specific land uses based on geographic location, site-specific factors, and practical availability of alternative modes of transportation. Single use studies often rely on data published by the Institute of Transportation Engineers (ITE) Trip Generation manual is a collection of parking demand data observations by land use type. The manual is based on data from single-use sites with ample free parking and limited transportation alternatives. While a single-use approach prevents spillover parking, it often means that a large supply sits vacant outside of peak hours. Parking requirements established solely through use of this publication may not be appropriate in denser urban environment. Most of the data are derived from suburban developments with limited transit ridership. While the manual is not an authoritative standard, it does contain the best available parking demand data. However, the manual does not provide parking supply standards or recommendations on preferred application of data. Quality and quantity of data vary significantly by land use; site-specific conditions influence parking demand. Therefore, field surveys of comparable local conditions should always be considered to estimate parking demand for specific single use sites.

The following are excerpts from parking analysis and comparison tables with parking observations per each use.

Multifamily

Chapter 51A requirements: One space per bedroom with a minimum of one space per dwelling unit. An additional one-quarter space per dwelling unit must be provided for guest parking if the required parking is restricted to resident parking only. No additional parking is required for accessory uses that are limited principally to residents.

Comparative table

Prepared by Scot Johnson, Kimley-Horn and Associates, Inc.
Excerpt from a Parking Analysis; data collected 2011, 2015-2020

Table 5 and **Table 6** provide the number of units, bedrooms, and the observed parking demand at each study location during the weekday and Saturday. With the 5 new sites in southwest Dallas, there were weekday observations available for 23 sites and Saturday observations available for 16 sites.

Table 5: Weekday Parking Demand

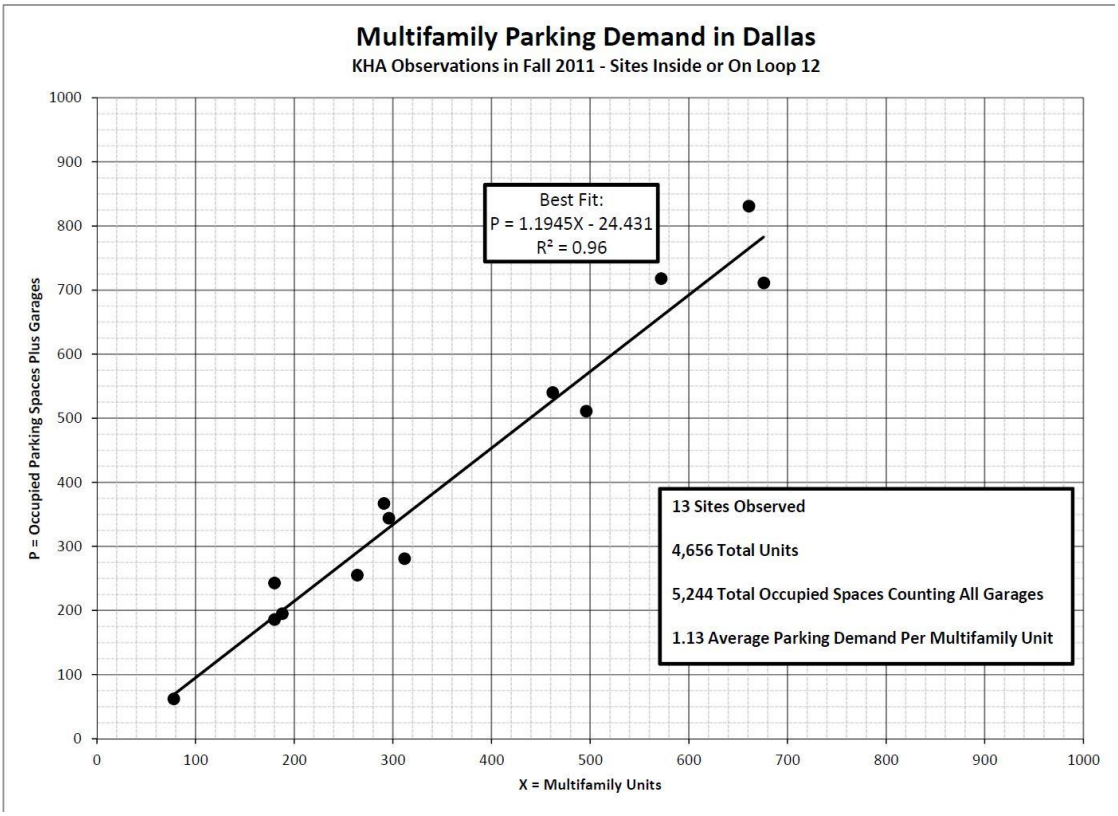
	Location & Date	Study Site	Dwelling Units	Bedrooms	Observed Parking Demand (Enclosed Garages Included)	Observed Demand per Unit	Observed Demand per Bedroom
					Overnight		
	Grapevine 2019	Grapevine Station	208	300	343	1.65	1.14
	Grapevine 2019	Stoneledge	312	463	454	1.46	0.98
	Grapevine 2019	Enclave at Grapevine	243	391	242	1.00	0.62
	Grapevine 2019	Terrawood	291	401	419	1.44	1.04
	Grapevine 2019	The Asher	450	-	581	1.29	-
	Grapevine 2018	Royal St. Moritz	336	528	467	1.39	0.88
	Grapevine 2018	Terrawood	291	401	400	1.37	1.00
	Grapevine 2018	Twenty-Four 99	348	486	452	1.30	0.93
	Grapevine 2018	Marquis at Silver Oaks	480	732	703	1.46	0.96
	Grapevine 2018	Montelena	256	400	330	1.29	0.83
	Fort Worth 2015	Sagestone Village	283	417	440	1.55	1.06
	Plano 2015	The Encore / Tribeca	638	817	775	1.21	0.95
	Plano 2015	Gateway Crossing 1 & 2	570	856	830	1.46	0.97
	Sachse 2015	Mansions at Woodbridge	381	658	567	1.49	0.86
	Richardson 2015	Breckenridge Point	440	680	628	1.43	0.92
	Richardson 2015	Clearwater Creek	442	676	630	1.43	0.93
	Wylie 2015	Broadstone Woodbridge	303	455	425	1.40	0.93
	Garland 2015	Stoneleaigh at Spring Creek 1&2	500	760	752	1.50	0.99
new	Dallas 2020	Mariposa Villas	216	310	305	1.41	0.98
new	Dallas 2020	Woodridge Apartments	264	588	344	1.30	0.59
new	Dallas 2020	Mountain Ridge	236	320	293	1.24	0.92
new	Dallas 2020	Landings at Bluff Ridge Aparments	256	638	274	1.07	0.43
new	Dallas 2020	Austin Bluff Apartments	232	296	293	1.26	0.99
		Weekday 23-Site Totals:	**7,976**	**11,573**	**10,947**	**1.37**	**0.90**
		Weekday 23-Site Averages:	**347**	**526**	**476**		

Table 6: Saturday Parking Demand

	Location & Date	Study Site	Dwelling Units	Bedrooms	Observed Parking Demand (Enclosed Garages Included)	Observed Demand per Dwelling Unit	Observed Demand per Bedroom
					Overnight		
	Grapevine 2019	Grapevine Station	208	300	313	1.50	1.04
	Grapevine 2019	Stoneledge	312	463	419	1.34	0.90
	Grapevine 2019	Enclave at Grapevine	243	391	330	1.36	0.84
	Grapevine 2019	Terrawood	291	401	403	1.38	1.00
	Grapevine 2019	The Asher	450	-	549	1.22	-
	Grapevine 2018	Royal St. Moritz	336	528	448	1.33	0.85
	Grapevine 2018	Cross Creek	392	544	444	1.13	0.82
	Grapevine 2018	Terrawood	291	401	397	1.36	0.99
	Grapevine 2018	Twenty-Four 99	348	486	443	1.27	0.91
	Grapevine 2018	Marquis at Silver Oaks	480	732	735	1.53	1.00
	Grapevine 2018	Montelena	256	400	290	1.13	0.73
new	Dallas 2020	Mariposa Villas	216	310	294	1.36	0.95
new	Dallas 2020	Woodridge Apartments	264	588	307	1.16	0.52
new	Dallas 2020	Mountain Ridge	236	320	263	1.11	0.82
new	Dallas 2020	Landings at Bluff Ridge Aparments	256	638	260	1.02	0.41
new	Dallas 2020	Austin Bluff Apartments	232	296	285	1.23	0.96
		Saturday 16-Site Totals:	**4,811**	**6,798**	**6,180**	**1.28**	**0.83**
		Saturday 16-Site Averages:	**301**	**453**	**386**		

The weekday observed parking demand including garages across the 23 sites averaged 1.37 vehicles per unit with a range of 1.00 to 1.65 spaces per unit. The average number of vehicles per bedroom was calculated to be 0.90, ranging from 0.43 to 1.14.

The Saturday observed parking demand including garages across the 16 sites averaged 1.28 vehicles per unit with a low observation of 1.02 and a high of 1.53. The Saturday average demand was observed to be 0.83 vehicles per bedroom, varying from 0.41 to 1.04.



Multifamily Parking Occupancy Observations
Data Collected Fall 2011

Data Collection Methodology: Counts of vehicles parked on site between 11 PM and 5 AM. Reserved garages were counted as occupied spaces, whether or not they contained a vehicle. Vehicles parked on the street which could be identified as being connected to the site were also added to the vehicle count in the "surface" category.

Site	Site Name	Units	Observed Parking Occupancy			Demand Per Unit
			Surface	Garage	Total	Including Garages
1	AMLI Knox-Henderson	180	186		186	1.03
2	Saltillo	78	62		62	0.79
3	Bell Carlisle	180	163	80	243	1.35
4	Cross Creek	264	255		255	0.97
5	Ranaissance Preston Hollow	291	263	104	367	1.26
6	Cambridge Court	312	281		281	0.90
7	Gables Knoxbridge	188	195		195	1.04
8	The Gate (Village)	462	540		540	1.17
9	Northbridge (Village)	572	582	136	718	1.26
10	The Lakes (Village)	676	711		711	1.05
11	The Meadows (Village)	296	344		344	1.16
12	The Chase (Village)	496	511		511	1.03
13	Westside + The Hill (Village)	661	766	65	831	1.26
	Totals	**4,656**	**4,859**	**385**	**5,244**	
	Averages	**358**				**1.13**

Senior Living, Retirement Housing

Chapter 51A requirements: One space per dwelling unit or suite.

Memorandum

Prepared by Scot Johnson, Kimley-Horn and Associates, Inc.
April 2017
(4 pages)

(…)

Texas Observations

Eight active adult senior living sites were found in the Dallas/Fort Worth metropolitan area. The average occupancy of the sites was 95%, or typical for the market average. Attempts were made to visit the sites and observe the parking occupancy in the morning, afternoon, and overnight time periods. Twenty observations were conducted, including all the overnight observations when parking occupancy is typically highest for residential areas. The daytime parking observations were included since some anecdotal accounts claimed higher parking demands during the day due to visitors. Each enclosed garage was assumed as an occupied parking space for the purposes of the occupancy study. Since some of the garage spaces could have been empty, this means that the observed parking demand is potentially artificially high.

The observed demand across the eight sites, taking the highest occupancy at each site regardless of the time period, averaged 0.88 vehicles per unit. The occupancy rate ranged from 0.72 to 1.16 spaces per unit. The outlier value of 1.16 vehicles per unit occurred at the Bridgemoor at Denton site, which is a sprawling site with one-story dwellings spread across 19.5 acres resembling a single-family community. Matching the single-family style, Bridgemoor also has a high number of garages compared to the rest of the sites, which artificially skews the vehicle numbers higher since all garages are counted as occupied. (pg 2)

Parking Demand at 8 Texas Sites

Study Site	Dwelling Units	Observed Parking Demand (Including Enclosed Garages)			Maximum Observed Demand Per Unit
		Morning	Afternoon	Overnight	
Discovery Village at Twin Creeks	180	151	148	145	0.84
Trinity Courtyard	138	95	100	96	0.72
McDermott Crossing	120	86	92	92	0.77
Bridgemoor at Denton	240	-	236	278	1.16
Chateau on Wildbriar Lake	120	105	-	108	0.90
Discovery Village - Stonebridge	151	92	87	120	0.79
Twin Rivers	156	129	-	133	0.85
Watercrest at Mansfield	211	-	170	162	0.81
8-Site Averages:	**165**				**0.88**

(pg 2)

Restaurants with Drive-Through

Chapter 51A ratio: restaurant with drive-in or drive-through service use is one space per 100 SF

1717 W Mockingbird Lane **(McDonald's)**
Prepared by: Christy Lambeth,
April 2020
(12 pages)

Introduction

(…) The site currently is currently vacant. The property is zoned Industrial Research District (IR) and parking is required per Chapter 51A. The purpose of this study is to project the parking demand for the planned McDonalds and determine whether the requested parking reduction will provide adequate parking supply. As shown in this analysis, the site is projected to provide sufficient parking taking into consideration an 11-space parking reduction based upon parking observations at three existing sites in Dallas. Therefore, approval of the 11-space parking special exception is recommended. (pg 1)
(…)

Code Parking Requirement

City of Dallas Chapter 51A parking requirement for r*estaurant with drive-in or drive-through service* use is one space per 100 SF, resulting in a parking requirement of 44 spaces for a 4,395 SF restaurant.

Parking Observations

Parking observations were conducted on Friday and Saturday, February 28 and 29, 2020 at two existing McDonald's sites near the proposed location during lunch and dinner periods. Parking observations from a 2018 McDonald's parking study on Coit Road were also taken into consideration in this study. (pg 1)
(…)

Table 1. Observed McDonald's Sites

Name	Address	Dates Observed	SF	Peak Parking Observed (Spaces)	Peak Parking Rate Observed (1 space per X SF)
1. McDonald's	4437 Lemmon Ave.	Fri. and Sat., Feb. 28 and 29, 2020	3,457	25	138
2. McDonald's	5722 W. Lovers Ln.	Fri. and Sat., Feb. 28 and 29, 2020	4,210	30	140
3. McDonald's	13040 Coit Rd.	Thurs. and Sat., Feb. 8 and 10, 2018	4,800	29	166

(pg 1)

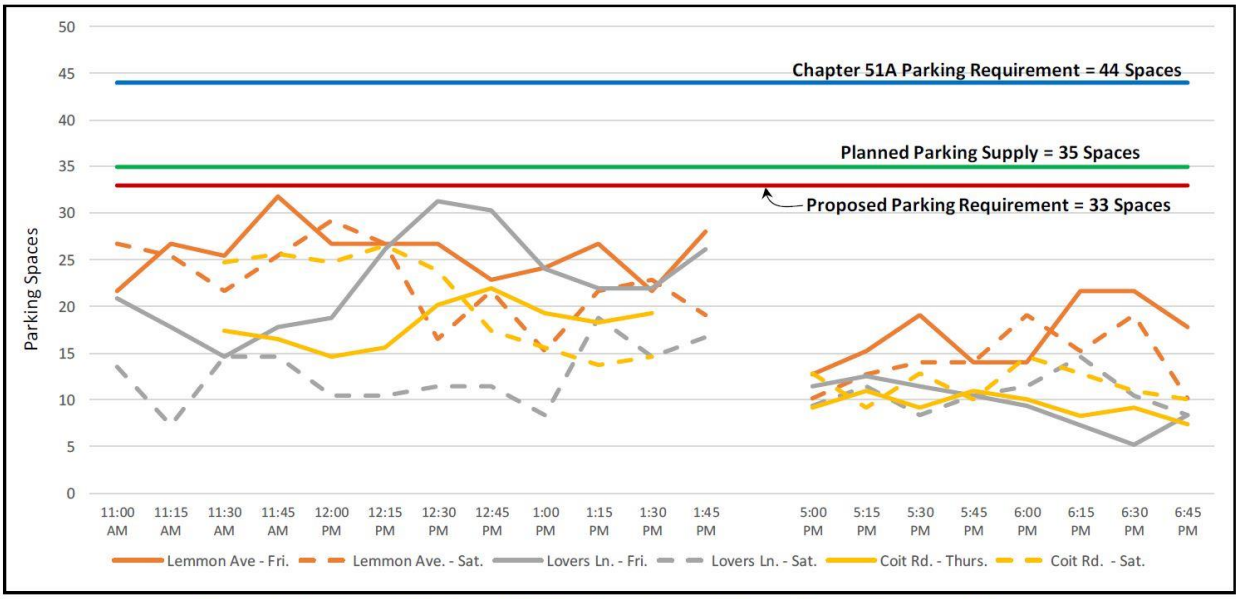


Figure 1. Projected McDonald's Parking Demand Based Upon Observed Sites

(pg 2)

General merchandise or food store greater than 3,500 square feet.

Chapter 51A ratio: One space per 200 square feet of floor area for uses with less than 10,000 square feet of floor area. One space per 220 square feet of floor area for uses with a floor area of 10,000 square feet or greater, but less than 40,000 square feet of floor area. One space per 250 square feet of floor area for uses with a floor area of 40,000 square feet or greater, but less than 100,000 square feet of floor area.

Comparative table

Prepared by Scot Johnson, Kimley-Horn and Associates, Inc.

Excerpt from a Parking Analysis

Kimley-Horn and Associates, Inc.

Table 4 – Dallas-Area Grocery Store Parking Observations

Location	Store Size	Observed Peak Demand (veh)	Observed Peak Demand (Rate)
Whole Foods Gaston/Abrams (suburban)	43,101 SF	Weekday - 142	3.29 per 1,000 SF 1 per 304 SF
		Saturday - 139	3.22 per 1,000 SF 1 per 310 SF
Whole Foods Lemmon Avenue (suburban)	35,600 SF	Weekday - 147	4.12 per 1,000 SF 1 per 242 SF
		Saturday - 152	4.33 per 1,000 SF 1 per 231 SF
Albertsons McKinney Avenue (urban)	50,513 SF	Weekday - 107	2.12 per 1,000 SF 1 per 572 SF
		Saturday - 132	2.61 per 1,000 SF 1 per 383 SF
Neighborhood Market Hall/North Central (urban)	42,060 SF	Weekday - 124	2.94 per 1,000 SF 1 per 339 SF
		Saturday - 132	3.14 per 1,000 SF 1 per 319 SF

(excerpt from a Parking Analysis, December 2012, pg 7)

Whole Foods Grocery Store Parking Observation - 2019

Location	Store Size	Observation	Observed Peak Demand (Rate)
Gables Whole Foods McKinney @ Routh Dense Multi-Use Urban With Transit Adjacency	53,424 SF	Friday Feb 22 1 PM – 104 Parked	1.94 per 1,000 SF 1 per 515 SF
		Monday Feb 25 12 PM – 95 Parked	1.78 per 1,000 SF 1 per 561 SF
		Monday Feb 25 5 PM – 72 Parked	1.34 per 1,000 SF 1 per 746 SF