PARKING STUDY

DOWNTOWN TULSA

TULSA, OKLAHOMA

Prepared for:
The Tulsa Parking Authority

FINAL REPORT

March 7, 2008

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March 7, 2008

David Giacomo
Tulsa Parking Authority
111 South Greenwood, Suite 200
Tulsa, Oklahoma 74103

Re: *Downtown Tulsa Parking Study – Final Report*

Dear David,

Walker Parking Consultants is pleased to submit the enclosed Downtown Tulsa Parking Study. This report outlines our understanding of the project, quantifies projected parking needs over the next ten years, identifies viable parking development sites, examines the financial feasibility of constructing additional parking, and identifies funding alternatives.

We appreciate the opportunity to be of service to you and the Tulsa Parking Authority.

Regards,

WALKER PARKING CONSULTANTS

Philip J. Baron
Project Manager

Jon R. Martens
Parking Consultant

Enclosure

cc: John W. Dorsett - Walker Parking Consultants

PARKING STUDY AND ANALYSIS

DOWNTOWN TULSA

TULSA, OKLAHOMA

Prepared for:
TULSA PARKING AUTHORITY

PROJECT NO. 25-1442.00

FINAL DOCUMENT
MARCH 7, 2008

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EXECUTIVE SUMMARY

The Tulsa Parking Authority (TPA) retained Walker Parking Consultants (Walker) to conduct a downtown parking study with the objectives of identifying the current and future parking needs, optimal development location(s) and financial viability of any recommended public parking improvements. The study area encompasses 83 city blocks that are divided into three sub-areas; the Central Business District, Brady Village District, and TCC District.

Downtown Tulsa is experiencing a positive transformation that is revitalizing its urban landscape. The most notable changes include the addition of the Bank of Oklahoma (BOK) Center, expansion and renovation of the Tulsa Convention Center, the relocation and consolidation of the City Hall, and the expansion of the Tulsa Community College metro campus. This combination of new and expanding land uses will likely generate a greater need for public parking supply in localized areas, with the overall future parking need heavily predicated on the success of each land use and the combined attraction of downtown.

The adopted position of the City set forth in the Downtown Public Investment Master Plan (2006) calls for the development of structured parking that not only satisfies current demand, but influences development by providing for future needs. This position recognizes that parking may be used as an instrument to encourage economic development and may be constructed without quantifiable justification of immediate or future need. Most communities do not have the fiscal stability of a solvent parking system like the TPA to support such a policy and typically are reactionary when it comes to addressing public parking needs. It is Walker's professional opinion that building parking structures in an urban environment with little or no pent-up demand may yield a low absorption rate in the short term, but may also be the influencing factor that draws a new tenant to the downtown community or enables an existing tenant to expand its operation.

At present, the total parking supply when compared to the existing demand is adequate in the study area. There would be no need for additional parking supply if stagnate market conditions were anticipated during the next ten years. The research conducted by Walker identifies a surplus of parking supply in each study area, albeit not always in a convenient location for existing downtown tenants. For the purposes of this analysis, convenient parking in downtown Tulsa is defined to be within a two block radius (600 feet) of a desired destination.

Within five years the total downtown parking demand is projected to increase by an incremental amount of 3,078 spaces. Much of the new parking demand will likely be absorbed into the existing parking surplus. However, our analysis of localized areas identifies multiple regions in the Central Business District with projected future needs that range between 7 and 532 spaces. *Walker recommends that the TPA adopt a goal of constructing a* <u>*minimum*</u> *net gain of 500 structured parking spaces within the next five years.* The actual size, location and timing will be dependant upon the funding capability of the TPA.

Within six to ten years the total downtown parking demand is projected to increase by an incremental amount of 2,655 spaces. Once again, the available parking supply will likely accommodate a portion of the incremental increase in parking demand, but the localized areas near sources of increased parking demand will likely experience a significant deficit in parking supply. Our analysis of localized areas identifies multiple zones with projected future needs that range between 300 to 1,452 spaces. *Walker recommends that the TPA adopt a goal of constructing a* <u>*minimum*</u> *net gain of 1,400 structured parking spaces within six to ten years.* The size, location and timing will be dependant on the funding capacity of the TPA.

It is Walker's professional opinion based on existing and projected parking needs, that sub-area A (Central Business District) is in need of additional public parking supply in the short-term, followed by sub-area C (Tulsa Community College District), then sub-area B (Brady Village District). This judgment is made based on Walker's understanding and analysis of the burgeoning areas in downtown and the rate at which new parking demand generators are anticipated to come online.

It is important to recognize that additional parking supply is not always the sole solution when an urban community is addressing negative parking perceptions. Although parking a vehicle in a lot or garage is not the ultimate purpose for driving downtown, drivers do have expectations of the experience that if not met, can cause negative perceptions that may impact future downtown patronage. Downtown Tulsa is in the process of improving roadways, pedestrian walkways, sidewalk streetscape, and its wayfinding system. All of these items can greatly impact the overall perception of parking conditions and increase the use of underutilized surface parking lots in an urban community.

Walker evaluated six potential parking development sites located throughout the study area. Each site was evaluated according to how well it ranks with site selection criteria considerations. The site comparison matrix evaluates the parking alternatives on the basis of seven criteria. The specific criteria used to evaluate the alternatives are as follows: Proximity to Demand, Project Cost, Land Availability, Future Development, Revenue Potential, Traffic Impact, and Mixed-use Potential.

Based on the stated criteria, Site B was identified as the highest ranking alternative site for development, followed closely by sites A and C. A recent attempt was made by the TPA to acquire Site B for the appraised value and the bid amount was not accepted by the seller. As a result, Walker was informed by the TPA that Site B was no longer a viable option. Of the remaining two sites, Site C is positioned in an area of downtown that could experience a moderate increase in parking demand levels within the next 5 to 10 years, whereas Site A is located in an area that anticipates a significant increase in employee and visitor parking demand within the next 1 to 2 years. Though the difference in quantified rankings based on key criteria for sites A and C are negligible, the difference is more pronounced when we consider how each site could best serve the areas of downtown with an <u>immediate need</u> for public parking. Walker recommends that the TPA consider the horizontal expansion of the One Technology Center Garage on Site A to serve the immediate need for additional public parking supply.

The proposed horizontal expansion would result in the net gain of approximately 580 structured spaces with an estimated project cost of $9.5 million.

The final determination of the relative attractiveness of the alternative solutions must rest with the Tulsa Parking Authority. However, the site analysis provides a reasonable and supportable look at the criteria upon which to base such a decision.

It is estimated that the expanded One Technology Center Garage could accommodate the future visitor and employee parking needs of the City Hall, tenants of the One Technology Center, a portion of the tenants in the Bank of Oklahoma Tower, as well as support future development in Brady Village District and the Blue Dome District.

Walker prepared a preliminary financial evaluation of the proposed parking expansion and concluded that the combined income from the One Technology Center Garage, plus the TPA System could support the development and operating costs. Two scenarios were prepared for the potential financing terms. Scenario one assumed $5 million pledged to the project cost and scenario two assumed $2 million. Under both scenarios the parking facility is projected to operate with a debt coverage ratio greater than 1.0 in the stabilized year (Year 3).

After careful consideration of both the current needs of the TPA and the various ways in which parking improvements may be funded in the future, Walker advises that the City of Tulsa and the TPA further evaluate the legal, political and financial aspects of implementing a Fee-in-Lieu shared parking model. The Fee-in-Lieu program may be an instrument that could be used to complement the user fees collected by the TPA.

The Fee-in-Lieu model provides a mechanism for developments to fund shared parking improvements. This model includes the following major points:

- Developer is provided an incentive to pay an in-lieu fee to the city to reduce their construction requirement, which will increase the density and the overall feasibility of the project;
- TPA could use the in-lieu fees to finance the construction of shared-use municipal parking facilities; and
- TPA could develop parking facilities with collected fees to meet project completions in a timely manner.

In order for a fee-in-lieu parking program to be implemented and effective there must be a minimum parking requirement within the city code. Many cities have long feared that requiring parking for each building in the CBD will “destroy the fabric” of the downtown. In other cases, cities have found that requiring parking for each building seriously constrains the revitalization of downtowns and the adaptive reuse of nearby industrial buildings that were not required to provide parking when first built, but now are under-utilized or vacant. Therefore, many cities have waived minimum parking requirements in the CBD. However, if minimum parking requirements are not applied to the CBD in some manner, the principles of shared parking and fees-in-lieu cannot be applied within the downtown. At present, the City of Tulsa parking code for land uses in the CBD do not require a minimum parking supply. Therefore, a code establishing a minimum parking requirement would be necessary prior to implementing any type of pay-in-lieu program.

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INTRODUCTION

STATEMENT OF UNDERSTANDING

The Tulsa Parking Authority (TPA) is being called upon by the City of Tulsa (City) to clearly address the future parking needs for the transformational developments taking place in the Central Business District (CBD) of Tulsa. Walker Parking Consultants (Walker) understands that the TPA intends to use this independent analysis of current and future parking conditions to set forth a strategy that will enable the TPA to address existing and future parking needs. This report identifies the present and future conditions with attention given to the future impact that known developments in downtown Tulsa may have on the downtown parking supply.

REPORT ORGANIZATION

This report provides an orderly presentation of the project information available at the time the study was conducted. This organizational method was implemented to aid the reader in comprehending the analysis supporting all recommendations within this report.

Figure 1: Report Organization

Parking Needs Assessment	Purpose: To identify current and future parking needs based on the evaluation of existing and proposed land uses.
Site Planning Alternative Analysis	Purpose: To identify, evaluate and recommend the most appropriate location(s) for future parking development(s).
Preliminary Financial Analysis	Purpose: To provide a financial analysis of any proposed parking improvement and its ability to be financially solvent as an operating asset of the Tulsa Parking Authority.

DEFINITION OF TERMS

Several terms in this section are industry specific and perhaps not readily understood by the reader. Definitions of these terms appear below.

- *Demand* – The number of spaces required to satisfy visitor, employee, and resident needs on a given day.
- *Demand Generator* – Any building, structure, business, or attraction that brings individuals into the study area, thereby increasing parking demand and occupancy.
- *Drive Ratio* – The percentage of people arriving to a destination as drivers of a private automobile.
- *Effective Supply* – The inventory adjusted by the optimum utilization factor.
- *Inventory* – The total number of parking spaces counted during survey day observations within the study area.
- *Occupancy (Counts)* – The number of vehicles observed parked on a survey day.
- *Optimum Utilization Factor* – The occupancy rate at which a parking supply operates at peak efficiency. This factor allows patrons to spend less time looking for the last available spaces and allows for the dynamics of vehicles moving in and out of spaces. It also allows for spaces lost to poor or improper parking, snow removal, derelict vehicles, and repairs.
- *Parking Adequacy* – The difference between the effective parking supply and demand.
- *Survey Day* – The day that the parking occupancy counts were conducted in the study area.

STUDY AREA

The geographical study area is generally bound by Interstate 244 (I-244) on the west, Detroit Avenue on the east, Easton Street/I-244 on the north, and 11th Street on the south. This area encompasses the core Central Business District, BOK Arena, Tulsa Convention Center, City Hall, Oklahoma State University Medical Center, Tulsa Community College, and the Brady Village area.

In order to more effectively assess parking needs in downtown Tulsa, the 83-block study area is divided into three sub-areas. The Tulsa Parking Authority provided Walker with the geographic boundaries of each area. The separate analysis of the future parking conditions for these areas facilitates a more complete understanding of each district's needs.

STUDY AREA A – CENTRAL BUSINESS DISTRICT

Study Area A is generally bound by Archer Street to the north, 8th Street to the south, Detroit Avenue to the east, and I-244 to the west. This area contains much of Tulsa's downtown commercial office space plus the new BOK Arena, many of the municipal, County State and Federal offices, as well as the Tulsa Regional Medical Center which recently became the teaching hospital for Oklahoma State University.

STUDY AREA B – BRADY VILLAGE ENTERTAINMENT DISTRICT

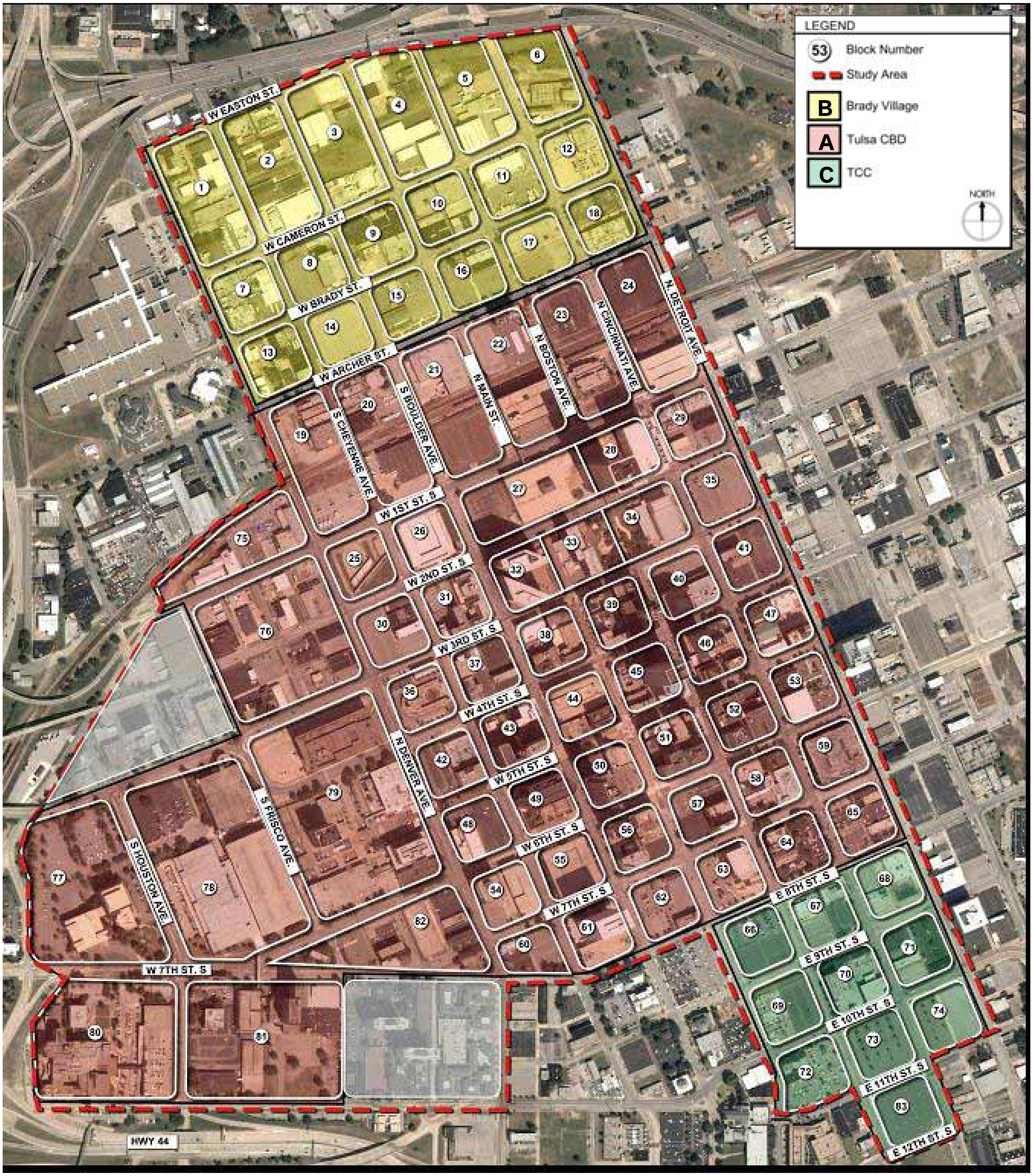
Study Area B is contiguous to the north of Area A and is generally bound by Easton Street to the north, Archer Street to the south, Detroit Avenue to the east, and Denver Avenue to the west. This 18-block area is a multiuse transitional area of arts and entertainment use and more recently housing and office use.

STUDY AREA C – TULSA COMMUNITY COLLEGE DISTRICT

Study Area C is a 10-block area that encompasses the Tulsa Community College Metro Campus. The area is generally bound by 8th Street to the north, 12th Street to the south, Detroit Avenue to the east, and Main Street to the west.

Figure 2 illustrates the boundary of the study area and sub-areas evaluated in this report.

Figure 2: Study Area Map



SUPPORTING DOCUMENTS

Conclusions and recommendations from previous studies relevant to downtown Tulsa were reviewed and, where appropriate, incorporated into this analysis. The primary documents reviewed by Walker include the following:

- 3rd Quarter 2007 The CoStar Office Report – Tulsa Office Market
- April 2007 Broken Arrow to Tulsa Mass Transit Feasibility Study
- 2nd Quarter 2007 In The Loop, Downtown Tulsa Unlimited
- 2007 Tulsa Arts District: Strategies for Redevelopment
- May 2007 Parking Needs Analysis for One Technology Center, Walker Parking Consultants
- March 2006, 2nd Street One-Way to Two-Way Conversion Study
- 2006 City of Tulsa Economic Development Strategic Plan
- March 2006 Downtown Tulsa Public Investment Master Plan
- July 2006 Downtown Tulsa Hotel Demand Study
- 2005 Metro Tulsa Talent Attraction Benchmark Study
- City of Tulsa Zoning and Property Restrictions, Title 42, Chapter 13, Section 1301

MATERIAL CHANGES IN PARKING SUPPLY

Two new parking facilities were constructed and one surface lot removed from service since the previous downtown parking study was conducted by Walker in 1999. The following are material changes noted in the parking supply in downtown Tulsa:

Added: 1,191-space 100 West Garage
(net gain of 891)

Added: 1,012-space One Technology Center Garage
(net gain of 795),

Removed: 150± surface spaces removed at 6th Street and Main Street
(converted to public green space)

In total, there was a net gain of approximately 1,536 ± structured parking spaces in downtown Tulsa.

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PARKING SUPPLY AND DEMAND ANALYSIS

The foundation of a parking demand analysis is an inventory of the parking supply. By examining an inventory of the parking supply and comparing it to the parking demand, we quantify the parking surplus or deficit that exists or may exist due to future development. When the parking supply exceeds the demand, a surplus of parking exists. Conversely, a deficit exists when parking demand exceeds the supply. This section presents an examination of Tulsa's current and future parking supply, demand, and adequacy.

CURRENT PARKING INVENTORY

Walker's research documented approximately ***26,166 total spaces in the study area***. There are approximately 1,645± on-street spaces and 24,521± off-street spaces. Of the total off-street spaces, 18,019± are open to the general public and 6,502± are available for private or restricted-use. A summary of the current parking supply is shown in Table 1.

Definition:

Public Supply: Parking supply that is made available to many user groups.

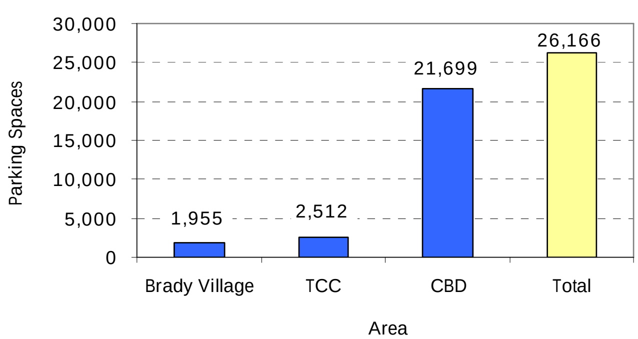
Private Supply: Parking supply that is restricted or dedicated to one specific user group.

Table 1: Summary of Parking Supply

Study Area	Name	Public Supply		Private Supply		On Street Supply		Total Supply	% of Total Supply
A	CBD	15,681	+	5,197	+	821	=	**21,699**	83%
B	Brady Village	1,303	+	-	+	652	=	**1,955**	7%
C	TCC	1,035	+	1,305	+	172	=	**2,512**	10%
	Total	18,019	+	6,502	+	1,645	=	**26,166**	100%
	% of Total Supply	69%		25%		6%		100%	

Note: Documented parking supply represents only lined parking stalls. Unmarked parking supply that was observed to be open to any user group is shown as public supply.
Source: Walker Parking Consultants 2007

Figure 3: Distribution of Parking by District



Source: Walker Parking Consultants 2007

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EFFECTIVE PARKING SUPPLY

The inventory of parking within the study area is adjusted to allow for a cushion necessary for vehicles moving in and out of spaces and to reduce the time necessary to find the last few remaining spaces when the parking supply is nearly full. We derive the effective supply by deducting this cushion from the total parking capacity. The cushion allows for vacancies created by restricting parking spaces to certain users (reserved spaces), misparked vehicles, minor construction, and storage of service vehicles and equipment. A parking supply operates at peak efficiency when parking occupancy is 85 to 95 percent of the supply. When occupancy exceeds this level, patrons are likely to experience delays and frustration while searching for a space. Therefore, the parking supply may be perceived as inadequate even though some spaces are available in the parking system.

As a result, the effective parking supply is used in analyzing the adequacy of the parking system, rather than the total supply or inventory of spaces. Following are some factors that affect the efficiency of the parking system:

- *Capacity* – Large, scattered surface lots operate less efficiently than a more compact facility, such as a double-threaded helix structure, which offers one-way traffic that passes each available parking space one time. Moreover, finding the available spaces is more difficult in a widespread parking area than in a centralized parking area.
- *Type of user* – Monthly or regular parking patrons can find the available spaces more efficiently than infrequent visitors because they are familiar with the layout of the parking facility and typically know where the spaces will be available when they are parking.
- *On-street vs. Off-street* – On-street parking spaces are less efficient than off-street spaces, due to the time it takes patrons to find vacant spaces and unclear signage that typically accompanies on-street parking systems. In addition, patrons are generally limited to one side of the street at a time and often must parallel park in traffic to use the space.

A parking supply operates at peak efficiency when parking occupancy is 85 to 95 percent of the supply.

The City of Tulsa recently installed centralized, multi-space on-street pay stations with clearly defined signs to help increase the ease of use and overall utilization of on-street parking.

After reviewing the study area, *Walker applied an 85 percent effective supply factor for all on-street spaces, 90 percent for all public off-street spaces and 95 percent for all private off-street spaces.* As previously mentioned, the study area contains a total of 26,166± spaces before any adjustments. After the effective supply factor is applied to the overall supply numbers, the study area's effective supply is 23,797± spaces. Table 2 shows the Effective Parking Supply and cushion for the study area as a whole. The total cushion of parking spaces is calculated to be approximately 2,369± spaces.

Table 2: Summary of Effective Supply

	Effective Parking Supply						Total Effective
	Public		Private		On-Street		Parking Supply
Actual	18,019	+	6,502	+	1,645	=	26,166
Cushion [1]	-1,803	+	-321	+	-245	=	-2,369
EPS [2]	16,216	+	6,181	+	1,400	=	23,797

[1] The weighted average Effective Supply Cushion equals roundly 9.0%.
[2] Effective Parking Supply, (EPS) calculated and rounded by block.

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CURRENT PARKING DEMAND

Demand for parking in the study area is a function of the relative attractiveness of the area for work, shopping, entertainment and living. Parking is not an end in of itself; rather it is a derivative of the demand for other activities and the travel characteristics of the market area. The quantity and type of activities within a market area most often determines the overall need for parking, as well as unique demand characteristics that relate to time-of-day, day-of-week and time-of-year variations.

The methodology employed by Walker to evaluate the current demand is predicated on the analysis of current peak parking occupancy during a typical busy weekday.

To determine the parking patterns of patrons in the study area, we evaluated the usage of all parking facilities located in the study area. An understanding of these parking patterns helped define both patron types and parking locations.

Occupancy data represents field data collected the weeks of August 20th and August 27th, 2007. Three counts were taken at approximately 9 a.m., 2 p.m., and 7 p.m. Although parking demand typically decreases after 3:00 p.m. in most urban markets, it is necessary to perform an evening count to confirm that this trend is true for Tulsa.

For the Brady Village District and Central Business District, the observed peak weekday parking demand occurred near the hour of 2:00 p.m.; for the TCC District, the peak weekday parking demand occurred near the hour of 9:00 a.m.

Table 3 summarizes the observed occupancy rates during a weekday for private and public off-street parking and public on-street parking.

The observed peak weekday parking occupancy for the entire area was approximately 61percent or 16,014 vehicles.

Table 3: Peak Hour Parking Occupancy Summary – Weekday

Parking Category	Supply	Occupied Spaces	Occupancy Percentage
Public Off-Street	18,019	11,146	62%
Private Off-Street	6,502	4,291	66%
Public On-Street	1,645	577	35%
Total	26,166	16,014	61%

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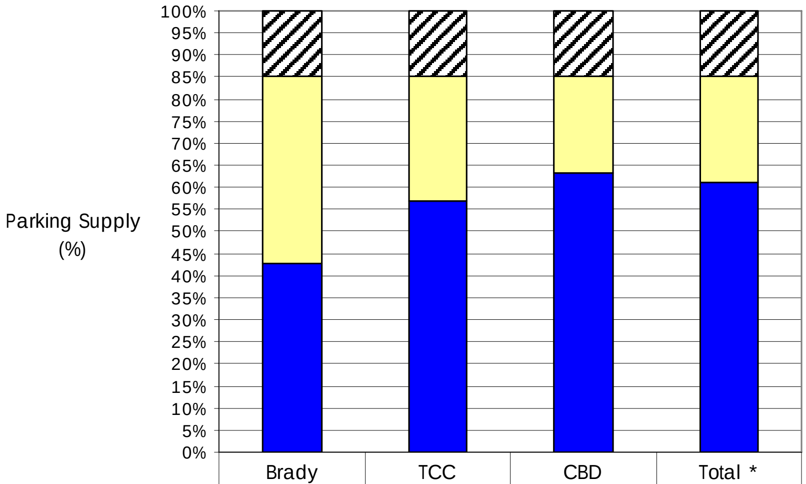
The observed peak weekday parking occupancy for the entire study area was approximately 61 percent or 16,014 vehicles (observed peak divided by actual supply).

Generally, parking occupancy at 85 percent is considered optimal. When occupancy levels are greater than 85 percent, parking is perceived as a problem. Analyzing the data by area provides an additional perspective of the data when judging current parking conditions.

Figure 4: Current Parking Occupancy by District



	Brady	TCC	CBD	Total *
Effective Supply Cushion	15%	15%	15%	15%
Surplus	42%	28%	22%	24%
Occupancy Rate	43%	57%	63%	61%

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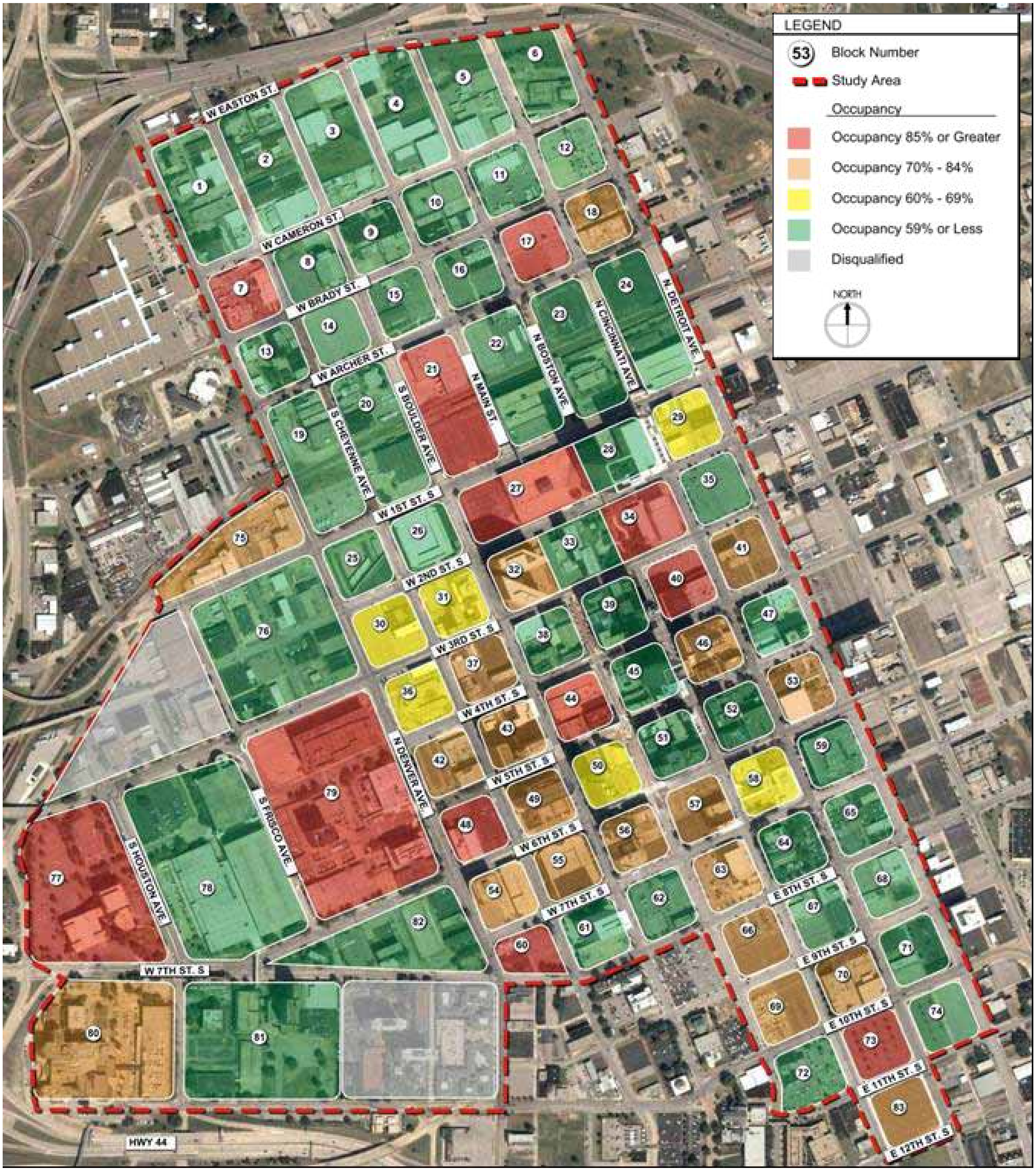
Current occupancy rates, as a whole, do not indicate a shortage of parking. Twelve blocks located throughout the study area are presently experiencing parking occupancy levels greater than 85 percent on a typical weekday, which generally indicates parking above the optimum utilization level.

The Current Parking Occupancy Map (Figure 5) uses color coding to show the current parking occupancy level of each block within the study area. The blocks shaded red signifies peak weekday parking conditions where parking occupancy is at 85 percent or greater.

Figure 5: Current Parking Occupancy



CURRENT PARKING ADEQUACY

Parking adequacy is the ability of the parking supply to accommodate the parking demand. For the total study area the demand is estimated based on the observed peak parking occupancy counts. The peak observed occupancy is subtracted from the effective supply to determine the adequacy for the total study area. The overall parking adequacy for the study area, by category, is summarized in Table 4.

Table 4: Summary of Current Parking Adequacy

Parking Category	Effective Supply		Demand		Adequacy
Public Off-Street	16,216	-	11,146	=	5,070
Private Off-Street	6,181	-	4,291	=	1,890
Public On-Street	1,400	-	577	=	823
Total	23,797	-	16,014	=	7,783

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As a whole, the current parking system has a surplus of approximately 7,783 spaces during peak weekday occupancy. There are 5,070 vacant public spaces, with 1,890 available private spaces and 823 on-street vacancies. This number, as previously mentioned, represents the peak weekday occupancy; the vacancy rate is understandably higher during evenings and weekends.

An assessment of each study area is summarized in Table 5 to better understand current parking adequacy conditions. Overall, the three study areas presently experience a parking surplus during peak weekday conditions.

Table 5: Current Parking Adequacy by District

Study Area	Effective Supply				Peak Parking Demand				Parking Adequacy			
	Public Off Street	Private Off Street	On Street	**Total**	Public Off Street	Private Off Street	On Street	**Total**	Public Off Street	Private Off Street	On Street	**Overall Adequacy**
A - CBD	14,112	4,940	699	**19,751**	10,149	3,288	308	**13,745**	3,963	1,652	391	**6,006**
B - Brady Village	1,172	-	556	**1,728**	621	-	215	**836**	551	-	341	**892**
C - TCC	932	1,241	145	**2,318**	376	1,003	54	**1,433**	556	238	91	**885**
Total	16,216	6,181	1,400	**23,797**	11,146	4,291	577	**16,014**	5,070	1,890	823	**7,783**

Note: Documented parking supply represents only lined parking stalls.
Unmarked parking supply that was observed to be open to all user groups is shown as public supply.

Walker Parking Consultants

SUMMARY OF CURRENT CONDITIONS

The analysis of current parking conditions indicates that the existing parking supply is adequate to serve the existing demand, both as a whole and within each of the defined study areas. The available parking supply is primarily located in the fringe areas and, if utilized, may require drivers to park approximately two to three blocks from their desired destination. Nonetheless, excess parking supply does exist in all three study areas. The lack of available parking supply proximate to popular destinations may create an overall perception at times of inadequate parking supply in downtown Tulsa.

Based on Walker's assessment of the parking characteristics in the study area, it is estimated that the parking demand is made up of approximately 80 percent monthly contract parkers and 20 percent daily transient parkers. Higher levels of transient activity are documented near the city and state buildings, and OSU Medical Center, while monthly parkers are the primary user group in the core CBD, TCC and Brady Village districts.

An unevenly distributed parking utilization pattern, or clustering, in a downtown area can often be more evenly distributed through educating and guiding drivers to available parking with a clearly identified wayfinding system. Implementation of a wayfinding system is one example of a transportation demand management (TDM) strategy that aims to maximize the existing parking resources prior to constructing new supply. The City of Tulsa is actively pursuing the implementation of a downtown wayfinding system that is part of the 2006 Third Penny Sales Tax project. The downtown wayfinding system will help to direct vehicles from the surrounding interstate roadways and downtown access points to structured and surface parking servicing the BOK Arena, Tulsa Convention Center, and other significant attractions. Once patrons park their vehicles a pedestrian signage system will assist in directing people to key downtown landmarks and entertainment areas.

The next section in this report addresses future conditions and impacts to the parking supply and demand over the next ten years.

CHANGES TO PARKING SUPPLY

At present, there are three known development projects in the core downtown area that will displace a total of 654 existing surface parking spaces and add 20 spaces. The net loss in parking supply will equal 634 spaces. These anticipated changes in supply, shown in Table 6, are factored in this analysis.

Table 6: Parking Supply Changes

Block	Project Name	Lost Parking	Added Parking
69	TCC - Center for Creativity	(114)	20
71	KMO Development	(240)	-
78	Convention Center Addition	(300)	-
	Totals	(654)	20

Source: Tulsa Convention Center, Tulsa Community College, KMO Development, and Walker Parking Consultants Research.

FUTURE PARKING DEMAND

Parking demand refers to the amount of parking that is estimated to be used at a particular time, place, and price. It is a critical factor in evaluating parking problems and solutions. Parking demand is affected by vehicle ownership, trip rates, mode split, length of stay, geographic location, type of trip (work, shopping, special event), the quality of public transportation and factors such as fuel and parking costs.

The methodology employed by Walker to project future demand combines the baseline demand which is equal to the observed peak weekday occupancy level, and any incremental change or growth in demand resulting from new land uses entering the study area. The baseline and incremental increase in demand are added together and then compared to the existing effective parking supply to determine the overall parking adequacy.

There are several proposed urban renewal and new downtown development projects that may directly impact public parking in downtown. City representatives and community stakeholders provided Walker with a list of developments likely to come to fruition within the next ten years. The list of proposed developments may not represent all real estate projects or business expansions being considered in the study area, but does represent a collection of the most significant projects being considered at this time.

Table 7: Future Changes in the Core Downtown Area

Item	Demand Generator	Block No.	Current Status/Use	5-Yr	10-Yr
1	City Government Consolidation	28	Planned Relocation to OTC	New City Hall at One Technology Center	-
2	One Technology Center	28	48,156 Rentable SF: Vacant	48,156 Rentable SF: 100% Occupied	-
3	Bank of Oklahoma Tower	28	Vacant Office Space	Absorption: Require 250± parking spaces	-
4	Performing Arts Center Expansion	35	334-Space Parking Lot	-	1,200-Seat Theater
5	BOK Arena	76	Under Construction	18,000 Seats	-
6	Tulsa Convention Center	78	138,300 SF Meeting Space	200,800 SF Meeting Space	-
7	Tulsa Convention Center	78	300-space parking lot	Displace 300 spaces	-
8	Tulsa Community College	70	8,005 Students/Faculty/Staff	8,804 Students/Faculty/Staff	9,607 Students/Faculty/Staff
9	Tulsa Community College	69	114-space parking lot	Displace 94 spaces, add 20	-
10	KMO Development	68	Underutilized buildings/lots	28 For Rent Units	-
11	KMO Development	68	Underutilized buildings/lots	28,000 SF Retail	-
12	KMO Development	71	Underutilized buildings/lots	175 Hotel Rooms	-
13	KMO Development	71	Underutilized buildings/lots	60 For Rent Units/Displace 240 spaces	-
14	Mayo Lofts	44	Planned Renovation	70 For Sale Units	-
15	Mayo Hotel	44	Planned Renovation	96 Hotel Rooms	-
16	Mayo Building	44	Planned Renovation	94 For Rent Units	-
17	201Building	42	57% Vacant	40% Vacant	20% Vacant
18	Adams Building	43	28% Vacant	20% Vacant	10% Vacant
19	The Secure Agent	43	49% Vacant	34% Vacant	17% Vacant
20	The Pythian Building	44	14% Vacant	10% Vacant	5% Vacant
21	First Place Tower	45	14% Vacant	10% Vacant	5% Vacant
22	Atlas Life Building	46	59% Vacant	41% Vacant	21% Vacant
23	Bank of America Center	50	20% Vacant	14% Vacant	7% Vacant
24	The Oil Capital	51	52% Vacant	36% Vacant	18% Vacant
25	Park Centre	51	39% Vacant	27% Vacant	14% Vacant
26	Amco South	52	3% Vacant	2% Vacant	1% Vacant
27	Philcade	52	3% Vacant	2% Vacant	1% Vacant
28	Towercade	52	100% Vacant	70% Vacant	35% Vacant
29	Petroleum Club	56	28% Vacant	20% Vacant	10% Vacant
30	Two West Sixth Street	56	59% Vacant	41% Vacant	21% Vacant
31	One Main Plaza	56	24% Vacant	17% Vacant	8% Vacant
32	Two Main Plaza	56	24% Vacant	17% Vacant	8% Vacant
33	Enterprise	57	81% Vacant	57% Vacant	28% Vacant
34	Avanti	68	78% Vacant	55% Vacant	27% Vacant
35	OSU Medical Center Campus	80	OSU Medical Center	5% Increase (Personnel & Patients)	5% Increase (Personnel & Patients)
36	Griffin Communications Media Center	5	Vacant Industrial Buildings	50,000 SF Media Center (186 staff)	-
37	Concept100 Building	17	Matthews Warehouse	Art Museum & Artist Lofts	-

Sources: City of Tulsa, Kanbar Properties, Tulsa Convention Center, BOK Arena, Downtown Tulsa Unlimited, Arts & Humanities Council of Tulsa, and OSU Medical Center.

The new land uses to be located in the core downtown area that sell products or services which are sensitive to business cycles impacted by macro variables and whose performance is strongly tied to the overall economy can impact the general need for parking. It is important to understand that parking is a derived demand and is susceptible to fluctuations based on changes in underlying economic conditions that drive the demand for primary activities in the core downtown area.

The following sections address the methodology and parking demand projection for each development identified in Table 7.

CITY GOVERNMENT CONSOLIDATION

In June of 2007, the Tulsa City Council approved the City's acquisition of the One Technology Center (OTC) office building for the purpose of consolidating a portion of its city government departments into one location. To understand the parking requirements of the various City departments that are planned for relocation, Walker reviewed surveys administered to city department heads by Matrix Architects regarding the number of employees, city vehicles, and daily visitor volume. The data includes the department name, function, daily visitor profile – categorized according to *City Employee* and *Public*, and the department parking needs – categorized according to *Personal Owned Vehicle (POV)* and *City Vehicle (CV)*. In addition, outdoor requirements, the type of visitors, and other unique characteristics that may impact the parking needs of each department were provided for in this analysis.

According to the stacking analysis prepared by Matrix, there are 1,016 employee work stations that will likely be required when the city consolidates departments in the OTC. This translates into a maximum employee parking need for 1,016 spaces, assuming one vehicle per employee. However, this figure must be adjusted to account for drive ratio and an oversell factor.

A drive ratio of 92 percent is applied to the calculation of potential parking demand for employee vehicles. In addition, the oversell factor is used to account for the fact that not all employees are at work everyday or for the entire day. It has been proven through numerous case studies that a typical office can experience 15 to 20 percent or even higher employee absence due to a combination of business travel, off-site meetings, vacation, and illness. For this analysis, Walker conservatively adjusted the POV employee parking space demand to account for a 15 percent oversell factor.

The adjusted employee parking space requirements are shown in Table 8.

Table 8: Employee POV Parking Needs

Base Demand		Drive Ratio Factor		Oversell Factor		Actual Demand[1]
1,016	x	0.92	x	0.85	=	795

[1] This represents the number of spaces needed

According to the survey information, there are approximately 255 city owned vehicles associated with the departments relocating to the OTC. These departments and city vehicle allocations are shown in Table 9.

Table 9: City Owned Vehicles by Department

Floor	Department Name	City Vehicles
4	Econ Dev/Dev Svcs/Permit Center	1
4	Econ Dev/Dev Svcs/Dev Plan Review	1
4	Finance Treasury License Center	1
4	Treasury Div/Audit and Collections Section	1
4	Environmental Ops Administration	1
4	Econ Dev/Development Svcs/Administration	2
4	Econ Dev/Dev Svcs/Building Plans Review	2
4	Environmental Ops/Water Supply	3
4	PW-Environmental Ops/Water Pollution Cont	7
4	Environmental Ops/Quality Assurance Sect	16
4	Dev Svcs/Econ Dev/Inspection Svcs	58
5	PW/HR-Policy Dept	1
5	HR/Workers Compensation	1
5	Finance/Purchasing	1
5	Pub Facilities Maint/Bldg Ops	4
5	Hdqtrs Div/Office of Integrity and Compliance	10
5	Pub Facilities Maint/Bldg Ops	11
6	Police Hdqtrs/Personnel Budget-Payroll	1
6	Planning Dept/Comm. Dev. & Educ. Initiatives	2
6	Human Rights	2
6	TPD/Chief's Section	5
6	Real Estate and Workforce Dev	15
6	Police Headquarters	23
6	Working in Neighborhoods	30
8	PW-Pub Facilities and Prop Mgmt	1
8	Pub Facilities & Prop Mgmt/Street Maint	3
9	ITD-CSS (Park)	1
9	ITD-CSS (Fire)	2
9	Systems Development and Support	10
9	Comm. Infrastructure Support Div (CISD)	39
	Total City Vehicles Requiring Parking	255

Source: MATRIX, Walker Parking Consultants, September 2007

Several departments provided additional comments that confirm their pattern of vehicle use. As a result, a 30 percent reduction is applied to the total number of the city-owned vehicles relocating to the OTC to account for vehicles that will be utilized off-site throughout a typical weekday. This amounts to a parking reduction of about 77 spaces, as shown in Table 10. The total number of required spaces for city vehicles during peak weekday conditions is estimated to be 178 spaces. This assumes no reserved parking spaces.

Table 10: City Owned Vehicle Parking Demand

Potential City Vehicles at OTC	255
Vehicles in use during the day (30%)	-77
Actual City Vehicles Requiring a Parking Space	178

Source: Walker Parking Consultants

VISITOR PARKING NEEDS

According to the data provided by each City department included in the consolidation, approximately 2,467 daily visits occur during normal weekday business hours. Visitor parking needs are split between City Employee visitors (946) and Public Visitors (1,521). This analysis considers the characteristics of each visitor type and applies utilization assumptions to account for daily distribution and length of stay for each group.

PUBLIC VISITOR PARKING DEMAND MODEL

To analyze the visitor parking needs, the volume of demand is distributed over a typical work day, between the hours of 8:00 a.m. and 5:00 p.m. The demand is further categorized as either short-term or long-term. Our model assumes 70 percent of the visitor parking to be short-term in nature, with a length of stay being two hours or less. The remaining 30 percent is assumed to be long-term parking, with the average length of stay of three hours or more. The assumed split between short and long-term parkers coincides with Walker's observation of user trends at surface parking lots proximate to City Hall and intended for visitor use.

The parking demand is then adjusted by a *captive factor*. The captive factor adjustment accounts for those visitors arriving to the OTC via means other than a private vehicle, such as car pooling, public transportation, etc, and for public visitors conducting multiple visits during one trip. A captive factor of 10 percent is applied to the entire public visitor parking demand, except for the visitor demand generated by Public Works, Policy Department and Utilities Service Department. In this case, a higher captive factor is applied to visitors of Public Works, Policy Department and Utilities Service Department which indicated that about 40 percent of daily visitors arrive by public transportation. This adjustment to visitor demand is reflected in the calculation of total vehicle volume (1,521). It is assumed that similar transit service stops are available near OTC and the use of public transportation by select visitors would continue.

Table 11 shows the visitor parking demand based on a tabulation of the department summary sheets. The overall peak hourly demand is projected to be 420 spaces during the 10:00 a.m. hour.

Table 11: Public Visitor Parking Demand

Vehicles:	1,521		LOS		Accumulation				
			Short	Long	Short	Long	Total	Captive	
Hr.	Dis. %	Dist.	70%	30%	>1	<1		Adjust.	Demand
8:00 AM	9%	137	96	41	96	41	137	90%	123
9:00 AM	14%	213	149	64	245	105	350	90%	315
10:00 AM	14%	213	149	64	298	169	467	90%	420
11:00 AM	10%	152	106	46	255	174	429	90%	386
12:00 PM	6%	91	64	27	170	137	307	90%	276
1:00 PM	10%	152	106	46	170	119	289	90%	260
2:00 PM	12%	183	128	55	234	128	362	90%	326
3:00 PM	10%	152	106	46	234	147	381	90%	343
4:00 PM	10%	152	106	46	212	147	359	90%	323
5:00 PM	5%	76	53	23	159	115	274	90%	247
6:00 PM	-	-	-	0	0	69	69	90%	62
	100%	1,521	1,063	458	Peak Demand		467		420

Source: Walker Parking Consultants

CITY VISITOR PARKING DEMAND MODEL

Table 12 shows the parking demand generation of City Employee visitors. The overall parking demand is again adjusted by a *captive factor*. The captive factor adjustment accounts for those City employees already parked for the day at the OTC. We assume the majority of visits are inter-departmental between City departments that will be located within the OTC. A 20 percent captive adjustment factor to City Visitors is applied to account for the reduction in overall visits. The adjustment means that 80 percent of the historical inter-departmental visits will take place within the consolidated office environment and 20 percent of visits will stem from off-site departments. The result is an adjusted peak demand of 58 spaces.

Table 12: City Employee Visitor Parking Demand

Vehicles:	946		LOS		Accumulation				
			Short	Long	Short	Long	Total	Captive	
Hr.	Dis.	D	70%	30%	>1	<1		Adjust.	Demand
8:00 AM	9%	85	60	26	60	26	86	20%	17
9:00 AM	14%	132	92	40	152	66	218	20%	44
10:00 AM	14%	132	92	40	184	106	290	20%	58
11:00 AM	10%	95	67	29	159	109	268	20%	54
12:00 PM	6%	57	40	17	107	86	193	20%	39
1:00 PM	10%	95	67	29	107	75	182	20%	36
2:00 PM	12%	114	80	34	147	80	227	20%	45
3:00 PM	10%	95	67	29	147	92	239	20%	48
4:00 PM	10%	95	67	29	134	92	226	20%	45
5:00 PM	5%	47	33	14	100	72	172	20%	34
6:00 PM	-	-	0	0	33	43	76	20%	15
	100%	947	665	287		Peak Demand	290		58

Source: MATRIX Summary Sheets and Walker Parking Consultants

Note that according to the surveys, City Visitor parking demand spikes twice a month during paydays as employee's pick-up pay stubs. We assume this demand will be sporadic throughout the day for very short periods of time. We assume this demand to be satisfied by proximate on-street parking. If this becomes an issue, we recommend an alternative method of distributing pay stubs be implemented, such as distributing the pay stubs from another location rather than OTC, sending pay stubs via U.S. mail, or using a courier service to distribute pay stubs to the appropriate department heads.

CITY HALL RELOCATION PARKING DEMAND SUMMARY

Parking demand is split between employees requiring monthly parking options and daily visitor parkers. To adequately provide parking for the two unique user groups, we first quantify the need and then look at the available supply that best suites each group. Table 13 provides a summary of the primary parking groups.

Table 13: Employee and Visitor Parking Demand Summary

Type of Parker	Unadjusted Parking Demand	Adjustments	Adjusted Parking Demand
Employee - POV	1,016	Drive Ratio & Oversell Factor	795
City Vehicle	255	In Use Adjustment	178
Visitor - Public	1,521	Presence Factor/LOS	420
Visitor - City Employee	946	Presence Factor/LOS/Captive Factor	58
Total Spaces	3,738		1,451

Source: Walker Parking Consultants

An allocation strategy for the parking demand by property locating and user group is located on the following page.

Table 14: One Technology Center Parking Strategy – 1 to 5 Years

Parking Location	Capacity	Vacancy	Employee Parking	Visitor Parking	COT Vehicles	Reserve Officials	Reserve New Tenant	Remaining Supply
OTC Garage	1,012	575	0	250	0	100	225	0
PAC Lot	330	150	0	150	0	0	0	0
Williams North Garage	905	529	450	0	0	0	0	79
100 West Garage	1,191	400	300	0	0	0	0	100
Hartford Lot	305	293	0	0	178	0	0	115
Santa Fe Lot	560	467	150	0	0	0	0	317
Williams South Garage	780	100	0	25	0	0	0	75
On-Street Meter Parking	93	54	0	50	0	0	0	4
Total	5,176	2,568	900	475	178	100	225	690

Source: Walker Parking Consultants

It is important to understand that parking operations are flexible and frequently adapt to market conditions by adjusting parking rates, hours of operation, and user groups. The parking strategy for One Technology Center will change as actual market conditions materialize. A typical modification may involve the number of spaces allotted to visitor parking at various lots and garages. Most often the parking management will establish capacity thresholds for monthly and visitor parking that is in line with historical parking patterns. The patterns may differ by day of week and month of year. The parking strategy for One Technology Center should be calibrated on a regular basis to reflect actual employee and visitor parking patterns and behavior.

MARCH 7, 2008

TULSA CONVENTION CENTER

The current Tulsa Convention Center offers over 138,300 square feet of exhibit hall space along with a 9,000-seat arena. The Convention Center is presently undergoing renovation plans set forth in Tulsa's VISION 2025 proposition to modernize the existing facility and make Tulsa more competitive with other Tier II Cities for Convention Center venues. The renovated Convention Center will retain elements of its original design while incorporating some elements of its new counterpart, the BOK Events Center.

The renovated Tulsa Convention Center will provide the largest single ballroom in Oklahoma at 34,800 square feet. The renovation also includes approximately 7,000 square foot of additional meeting room space on the lower level, street level, and second level for a total of 21,000 square feet.

Table 15 details the existing facilities at the Convention Center by either square footage or seating capacity.

Table 15: Existing Tulsa Convention Center Facilities

Building Space	Square Feet	Seats	SF/GLA[1]
Exhibit Hall A	30,400		25,840
Exhibit Hall B	34,200		29,070
Exhibit Hall C	38,000		32,300
Conference Hall	20,000		17,000
Assembly Hall	7,700		6,545
Meeting Rooms	8,000		6,800
Arena		9,000	
Existing Total	138,300	9,000	117,555
Expansion			
Exhibit Hall D	32,900		27,965
Exhibit Hall E	29,600		25,160
Total	62,500	0	53,125
Total	200,800	9,000	170,680

Tulsa Convention Center

[1] Demand based on Square Feet Gross Leaseable Area (SF GLA). The estimated SF GLA is based on .85 x the actual square feet.

CONVENTION CENTER PARKING DEMAND

To calculate parking demand for the convention center, we used parking demand ratios based on Walker's research of convention centers and ITE's research for performing art centers. A parking demand ratio of 6.0 spaces per 1,000 SF GLA was used for convention center space, on both a weekday and weekend. Ratios of 0.30 per seat were used for a weekday and weekend respectively for a performing arts center. Table 16 shows the calculated parking demand for each of the current building areas. To convert the square feet to SF GLA, we assumed a fifteen percent reduction to the total square feet.

Table 16: Parking Demand, Current Configuration

Demand Ratio *6/1,000sf* *.3/Seat*

Building Space	Square Feet	Seats	SF GLA[1]	Potential Parking Demand
Exhibit Hall A	30,400		25,840	155
Exhibit Hall B	34,200		29,070	174
Exhibit Hall C	38,000		32,300	194
Conference Hall	20,000		17,000	102
Assembly Hall	7,700		6,545	39
Meeting Rooms	8,000		6,800	41
Arena		9,000		2,700
Totals	138,300	9,000	117,555	3,405
Arena Only				2,700
Exhibit and Meeting Only				705

Walker Parking Consultants
[1] Demand based on Square Feet Gross Leaseable Area (SF GLA). The estimated SF GLA is based on .85 x the actual square feet.

Parking demand for current conditions varies depending on the event and configuration of the space. For planning purposes, we assume peak parking demand of about 3,405 spaces, which accommodates functions in both the exhibit space and the arena. Based on a review of events, our opinion is a full house occurs about 15 times per year.

Table 17: Parking Demand, After Expansion

Demand Ratio	*6/1,000sf*	*.3/Seat*		
Building Space	Square Feet	Seats	SF/GLA[1]	Potential Parking Demand
Exhibit Hall A	30,400		25,840	155
Exhibit Hall B	34,200		29,070	174
Exhibit Hall C	38,000		32,300	194
Conference Hall	20,000		17,000	102
Assembly Hall	7,700		6,545	39
Meeting Rooms	8,000		6,800	41
Arena		9,000		2,700
Exhibit Hall D	32,900		27,965	168
Exhibit Hall E	29,600		25,160	151
Totals	200,800	9,000	170,680	3,724
Arena Only				2,700
Exhibit and Meeting Only				1,024

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As the expansion process is completed, the parking demand increases to about 3,724 spaces for the combined exhibition space and meeting rooms. The expanded meeting spaces increases the exhibit hall parking demand from approximately 705 spaces to 1,024.

TULSA CONVENTION CENTER PARKING ADEQUACY

Taking into consideration this increase in demand, it is necessary to examine the adequacy of the parking supply in the areas surrounding the Convention Center. Table 18 shows the anticipated demand of 3,724 spaces against the effective supply of the provided on-site parking. We have also considered the available parking located within a reasonable walking distance, as defined in the table. This table demonstrates a surplus of parking for all events at the Tulsa Convention Center, when accounting for future expansion.

Table 18: Event Parking Adequacy

Space Use	Demand	On-Site Parking (ES)[1]	Walking Distance[2]	Surplus (Deficit)
Exhibit & Meeting	1,024	1,260	n/a	236
Arena (Concert)	2,700	1,260	3,429	1,989
Exhibit and Arena	3,724	1,260	3,429	965

[1] ES = Effective Supply

[2] Blocks 77, 79, 82, 54, 48, 42, 36, 30

Walker Parking Consultants

BANK OF OKLAHOMA (BOK) CENTER

The Bank of Oklahoma Center is an 18,041-seat, 550,000 square foot, multi-purpose arena currently under construction and scheduled for completion in September of 2008. The site of the BOK Center is bound by 1st Street o the north, 3rd Street on the south, Denver Avenue on the east and Frisco Avenue on the west. The arena is expected to draw over 150 events a year with an estimated 214 total event days. Walker worked with representatives of the BOK Center to identify plausible special event operating assumptions that are used in this analysis to project future parking needs.

It is estimated that during peak event conditions, approximately 4,800 vehicles could park in downtown Tulsa near the arena. The methodology and calculation used to project the peak parking condition for the arena is shown in Table 19, on the following page.

Table 19: BOK Center Events

[1] Potential Arena Events:	Events	Average Event Days	[2] Total Event Days	[2] Primary Time of Day	[2] Average Attendance	[2] Average Occupancy Per Vehicle	[2] Average Parking Demand
Hockey	32	1	32	7:00 PM	6,000	2.5	2,400
Family Shows	20	1	20	3:00 PM	5,000	3.0	1,667
Arena Football	8	1	8	7:00 PM	6,000	2.5	2,400
Concerts	16	1	16	7:00 PM	9,000	2.5	3,600
Rodeos/Bullriding	6	1	6	1:00 PM	14,000	3.0	4,667
Religious/Conventions	6	2	12	10:00 AM	10,000	3.0	3,333
Graduations/Civic Events	5	1	5	10:00 AM	3,000	4.0	750
Professional Wrestling	2	1	2	7:00 PM	12,000	2.5	4,800
Basketball Games	3	1	3	2:00 PM	12,000	2.5	4,800
Other Sporting Events	6	1	6	2:00 PM	8,000	2.5	3,200
Motor sports	4	1	4	1:00 PM	8,000	2.5	3,200
Banquets/Meetings/Parties	50	2	100	6:00 PM	1,000	2.0	500

Estimated Peak Parking Demand = 4,800

NOTES:

[1] Potential events and average number of events provided by General Manager of BOK Center and Tulsa Convention Center

[2] All estimated data based on Walker's experience analyzing large event centers in other downtown communities.

If an event is held in the evening at the BOK Center that attracts approximately 4,800 drivers to downtown, while simultaneously an event is held at the Convention Center that attracts 1,024 drivers, will there be adequate parking supply to accommodate both venues? Our analysis of the existing parking supply located within approximately a two block radius walking distance from both venues identifies that the current parking supply would be adequate (See Table 20). It is important to note that the arena management is proficient in setting a program for a large event with the parking requirements for each type of venue taken into consideration. Even though it may be rare for two large events to occur simultaneously at the Convention Center and BOK Center, it is important to have an understanding of the surrounding parking accommodations.

Table 20: Dual Event Parking Adequacy, 5 Years

Space Use[1]	Demand	Parking Supply[2]	Surplus (Deficit)
BOK Arena (Large Event)	4,800	5,435	635
Convention Center Meeting & Exhibit	1,024	4,689	3,665
Combined Events	5,824	6,623	799

[1] Assume BOK Arena event, Convention Exhibit & Meeting event, and combined events at same time.

[2] Blocks 78, 79, 82, 48, 42, 36, 30, 25, 19, 20, 26, 31, 37, 43, 54, 77

Walker Parking Consultants

TULSA COMMUNITY COLLEGE METRO CAMPUS

Walker Parking Consultants obtained student, faculty and staff statistics from Tulsa Community College (TCC) in order to calculate the future parking adequacy at the TCC Metro Campus. The total forecasted number of students, faculty and staff is used as the base indicator from which future parking demand is derived. Since the TCC parking system does not segregate parkers according to classification, one parking demand ratio is applied to all students and employees of the college.

Walker evaluated the head count data provided by the college, as well as the observed peak parking demand statistics. A parking demand ratio was generated by dividing the peak demand by the current and anticipated TCC headcounts. The following tables identify the forecasted head counts and parking occupancy data used in the derivation of the peak parking demand ratio.

Table 21 shows the TCC headcount information, as provided by the college. Forecasts provided by TCC show a 20% growth rate over the next ten years.

Table 21: Change in TCC Metro Campus Population Statistics

User Group	Current	5 Year	10 Year	Distribution (%)
FT Students	2,789	3,069	3,349	34.9%
PT Students	4,395	4,833	5,272	54.9%
Total Enrollment	7,184	7,902	8,621	89.7%
Faculty FT	110	121	132	1.4%
Faculty PT	243	267	292	3.0%
Staff FT	175	192	210	2.2%
Staff PT	263	289	316	3.3%
Contract Employee	30	33	36	0.4%
Total	8,005	8,804	9,607	100.0%
% Change			20.0%	

Tulsa Community College

Table 22 shows the parking demand by block at 9:00 a.m., 2:00 p.m., and 7:00 p.m. compared with the total TCC regulated parking supply in the TCC Study Area.

Table 22: TCC Study Area - Current Peak Parking Conditions

		Parking Demand		
Block	[1] Supply	9:00 AM	2:00 PM	7:00 PM
66	126	125	59	21
67	90	90	45	11
68	0	0	0	0
69	114	114	101	64
70	0	0	0	0
71	0	0	0	0
72	0	0	0	0
73	289	289	162	162
74	341	130	49	12
83	345	255	54	9
Totals	1,305	1,003	470	279

Walker Parking Consultants
[1] Supply numbers represent TCC parking areas only.
* 9:00 AM represents observed peak conditions during a weekday.

Table 23 shows the demand ratio calculation, based on the head count information contained in Table 21 and the demand information contained in Table 22.

Table 19: Parking Demand Ratio

	[1]Total Head Count		[2] Observed Peak Demand		[3] Demand Ratio
Base Demand Ratio	8,005	/	1,003	=	**0.13**
Projection Period	[1] Forecasted Head Count		Demand Ratio		Projected Parking Demand
5-Year	8,804	x	0.13	=	1,145
10-Year	9,607	x	0.13	=	1,249

[1] Source Tulsa Community College, 2007

[2] Source Walker Parking Consultants

[3] Equal to the Observed Peak Demand divided by the Total Head Count (rounded)

Parking adequacy for the TCC Metro Campus is determined by comparing the projected parking demand to the projected effective parking supply. To determine the adequacy on a block-by-block basis, we considered the current parking distribution and the addition of the 48,610 SF Center for Creativity in block 66. This addition will eliminate 114 parking spaces used by TCC on block 69, while adding 20 new surface spaces for a total net loss of 94 spaces.

Table 24 demonstrates current, five-year, and ten-year adequacy for TCC Metro Campus only.

Table 20: TCC Metro Campus Parking Adequacy

Block	Current Adequacy	5-Year Adequacy	10-Year Adequacy
66	(5)	(6)	(17)
67	(4)	(5)	(14)
68	0	0	0
69	(6)	1	(1)
70	0	0	0
71	0	0	0
72	0	0	0
73	(14)	(23)	(50)
74	194	35	9
83	73	5	(24)
Totals	238	7	(97)

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TCC Metro Campus is projected to experience near capacity parking conditions in the next five years, while in six to ten years student enrollment growth along with increased faculty and staff are projected to generate a parking need for 100± additional parking spaces.

NEW / RENOVATED LAND USES

Nine development projects are planned in the study area that will each generate a unique peak parking demand based on key programming variables. Factors that affect projections include the specific type of land use, the size of the project, and project acceptance in the marketplace. For each of the planned developments parking demand is expressed as a demand ratio per unit of measurement, typically in terms of spaces per 1,000 GLA SF[1], rooms, or seats.

The base parking demand ratios are adjusted to reflect the driving ratio of employees and visitors to the area, as well as a non-captive ratio to avoid double counting patrons that are already parked for a different land use. An example of this concept is someone who has parked at the office and walks to an adjacent restaurant for lunch. As they are already counted in the office parking demand, they therefore should not be counted as parking demand for the restaurant. The base parking demand ratios used in our analysis are presented in Table 25.

Table 21: Base Parking Demand Ratios

Land Use	Weekday Demand Ratio	Unit	Source
Residential - Rented	1.5	/Unit	2, 3
Retail	3.6	/1,000 GLA SF	1
Hotel	1.25	/Room	2, 4

1. *Parking Requirements for Shopping Centers*, Second Edition. Washington DC: ULI-The Urban Land Institute, 1999
2. *Parking Generation,* Third Edition. Washington DC: Institute of Transportation Engineers, 2004
3. Data collected by Walker.
4. Gerald Salzman, "Hotel Parking: How Much Is Enough?" Urban Land, January 1988.

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[1] GLA SF – Gross Leasable Area Square Feet

The base parking demand ratios were adjusted to account for general commuting statistics obtained from the U.S. Census Bureau for Tulsa, Oklahoma, and our opinion of non-captive factors for each project. The calculated parking demand represents peak weekday conditions at each of the planned developments. Note that the projected parking demand will change if the use or size of a property is adjusted.

Table 22: Calculated Parking Demand by Project

Block	Name	Building Use	Size	Unit	Added Demand
68	KMO Apartments	Condos	28	units	48
68	KMO Retail	Retail	28,000	SF	101
71	KMO Hotel	Hotel	175	rooms	210
71	KMO Apartments	Condos	60	units	102
44	Mayo Lofts	Lofts	70	units	119
44	Mayo Hotel	Boutique hotel	96	rooms	96
44	Mayo Building	Residential	94	units	160
17	Concept100	Visual Arts Center	100,000 [1]	SF	200
5	Griffin Communications	Media Center	50,000	SF	200
	Total Parking Demand				1,236

[1] Concept100 Art Center size based on conceptual estimate.

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KANBAR PROPERTIES

In addition to these specific developments, there is much interest in the potential increase in occupancy of the recently acquired Kanbar properties in downtown Tulsa. The current vacancy rate is approximately 28 percent for the 2,921,500 square feet of building space. Our projections apply the assumption that the office vacancy for the Kanbar Properties will be reduced to 19 percent within five years and 10 percent within ten years.

Key Assumption:
For the subject Kanbar Properties, the current total building vacancy rate of 28% will decrease to 19% in one to five years and 10% in six to ten years.

Table 23 lists the Kanbar Properties and approximate square footage. Table 28, on the next page, shows the current office vacancy rate, as supplied by Kanbar Properties, and the added parking demand based on a decrease in office space vacancy rates over the next five and ten year periods.

Table 23: Kanbar Property List

Block	Building Name	Location	Sq ft
42	201 Building	201 W. 5th	73,000
43	Adams	403 S. Cheyenne	52,000
43	The Secure Agent	111 W. 5th	98,000
44	The Pythian Building	423 S. Boulder	40,000
45	First Place Tower	15 E. 5th St.	624,000
46	Atlas Life	415 S. Boston	93,500
50	Bank Of America Center	15 W. 6th St.	287,000
51	The Oil Capital	507 S. Main	38,000
51	Park Centre	525 S. Main	175,000
52	Amoco South	519 S. Boston	424,000
52	Philcade	501 S. Boston	424,000
52	Towercade	119 E. 6th	133,000
56	Petroleum Club	601 S. Boulder	118,000
56	Two West Sixth Street	2 W. 6th Street	66,000
56	One Main Plaza	610 S. Main	32,000
56	Two Main Plaza	616 S. Main	32,000
57	Enterprise	610 S. Boston	132,000
68	Avanti	810 S. Cincinnati	80,000
			2,921,500

Source: Kanbar Properties

Table 24: Current Kanbar Building Vacancy/Availablity

			Current Conditions			5-Year Assumption			10-Year Assumption		
Block	Building Name	Total SF	Vacancy	Available SF	Occupied SF	Vacancy	Available SF	Occupied SF	Vacancy	Available SF	Occupied SF
42	201 Building	73,000	57%	41,610	31,390	40%	29,127	12,483	20%	14,563	27,047
43	Adams	52,000	28%	14,560	37,440	20%	10,192	4,368	10%	5,096	9,464
43	The Secure Agent	98,000	49%	48,020	49,980	34%	33,614	14,406	17%	16,807	31,213
44	The Pythian Building	40,000	14%	5,600	34,400	10%	3,920	1,680	5%	1,960	3,640
45	First Place Tower	624,000	14%	87,360	536,640	10%	61,152	26,208	5%	30,576	56,784
46	Atlas Life	93,500	59%	55,165	38,335	41%	38,615	16,550	21%	19,308	35,857
50	Bank Of America Center	287,000	20%	57,400	229,600	14%	40,180	17,220	7%	20,090	37,310
51	The Oil Capital	38,000	52%	19,760	18,240	36%	13,832	5,928	18%	6,916	12,844
51	Park Centre	175,000	39%	68,250	106,750	27%	47,775	20,475	14%	23,887	44,363
52	Amoco South	424,000	3%	12,720	411,280	2%	8,904	3,816	1%	4,452	8,268
52	Philcade	424,000	3%	12,720	411,280	2%	8,904	3,816	1%	4,452	8,268
52	Towercade	133,000	100%	133,000	0	70%	93,100	39,900	35%	46,550	86,450
56	Petroleum Club	118,000	28%	33,040	84,960	20%	23,128	9,912	10%	11,564	21,476
56	Two West Sixth Street	66,000	59%	38,940	27,060	41%	27,258	11,682	21%	13,629	25,311
56	One Main Plaza	32,000	24%	7,680	24,320	17%	5,376	2,304	8%	2,688	4,992
56	Two Main Plaza	32,000	24%	7,680	24,320	17%	5,376	2,304	8%	2,688	4,992
57	Enterprise	132,000	81%	106,920	25,080	57%	74,844	32,076	28%	37,422	69,498
68	Avanti	80,000	78%	62,400	17,600	55%	43,680	18,720	27%	21,840	40,560
	Total	2,921,500	28%	812,825	2,108,675	19%	568,977	243,848	10%	284,488	528,336

Source: Walker Parking Consultants, Kanbar Properties

There are several key assumptions that factor in to the five year office vacancy projections for the Kanbar Properties. Walker assumes that in five years 30% of available building space will be redeveloped and occupied as mixed use property. Mixed use is assumed to consist of residential, retail, restaurant, and office space. Walker assumes that in ten years 65% of available building space will be redeveloped and occupied as mixed use property. The ten year assumptions equate to approximately a 10 percent vacancy rate. To determine the impact on parking demand, we assumed blended parking demand ratio of 3.5 spaces per 1,000 SF.

Table 25: Kanbar Properties Added Parking Demand

Block	Building Name	5-Year Added Demand	10-Year Added Demand
42	201 Building	44	95
43	Adams	15	33
43	The Secure Agent	50	109
44	The Pythian Building	6	13
45	First Place Tower	92	199
46	Atlas Life	58	125
50	Bank Of America Center	60	131
51	The Oil Capital	21	45
51	Park Centre	72	155
52	Amoco South	13	29
52	Philcade	13	29
52	Towercade	140	303
56	Petroleum Club	35	75
56	Two West Sixth Street	41	89
56	One Main Plaza	8	17
56	Two Main Plaza	8	17
57	Enterprise	112	243
68	Avanti	66	142
	Totals	853	1,849

Source: Walker Parking Consultants,

OKLAHOMA STATE UNIVERSITY (OSU) MEDICAL CENTER

The OSU Medical Center is located in the southwestern corner of the study area, in block 80. To determine the current conditions, inventory and occupancy counts were taken on the campus to determine the peak occupancy and usage patterns, and a survey of existing and future conditions was administered to the hospital to correlate the data.

The peak parking demand for the hospital campus was determined to be 1,044 occupied spaces on the survey day.[2] This figure represents the peak occupancy for the three main user groups on the campus; Outpatients/Visitors; Emergency Department (ED), and Physicians and Staff.

PARKING DEMAND RATIOS

To more precisely determine the number of parking spaces needed for each type of parking patron, Walker compared the parking occupancy numbers to the group population statistics provided by the hospital. The demand ratio for each group was then determined to estimate the number of parking spaces required by each user group.

To determine the base demand ratios, the observed peak parking occupancy document on the survey day for each hospital user group was divided by the survey day group statistics. After we tested the demand ratios developed from this analysis for reasonableness and accuracy, we use these parking ratios to model parking demand within the OSU Medical Center campus. Shown in the following table are the group population statistics[3], the estimated peak hour parking occupancy by user group, and the resulting demand ratios for the survey day.

Table 30: Parking Demand Ratios

User	Demand		User Statistic		Demand Ratio
Visitors/Outpatient	289	÷	296 Beds in Service + Outpatients	=	0.98 spaces/Outpatient
ED	31	÷	117 ER Visits	=	0.26 spaces/ED visit
Physicians/Staff	722	÷	1,385 Physicians + FTE Staff[1]	=	0.52 spaces/Physicians & Staff

[1]Physicians, FTE Staff also includes Students, Interns, and Residents

Source: Walker Parking Consultants

[2] Survey day – 9/25/07
[3] As provided by the Hospital

DESIGN DAY PARKING DEMAND

The design day is the day that represents the activity level that the parking system is designed to accommodate. This allows for adequate parking during most conditions without over building the parking system. For this analysis, we based the design day demand on the 90th percentile of activity. To determine how the survey day compared to the 90th percentile of activity, we obtained the survey day and previous 365 days of activity from the hospital. On the survey day, the level of activity was somewhat lower than a typically busy day (the design day).

The demand ratio estimated for each user group is used to estimate the number of parking spaces needed for each type of patron on the design day. The design day parking demand for all activity-sensitive categories of parkers is estimated to adequately supply the needs of the campus on all but twelve days per year. The current and future levels of outpatients, physicians, full and part-time hospital staffing, and emergency department visitors were provided by the hospital administration.

The current design day parking demand is estimated by multiplying the survey day demand ratios for each parking user group times each adjusted user group statistic, as depicted in Table . This shows the design day demand for the hospital to be 1,141 spaces.

Table 31: Design Day Parking Demand

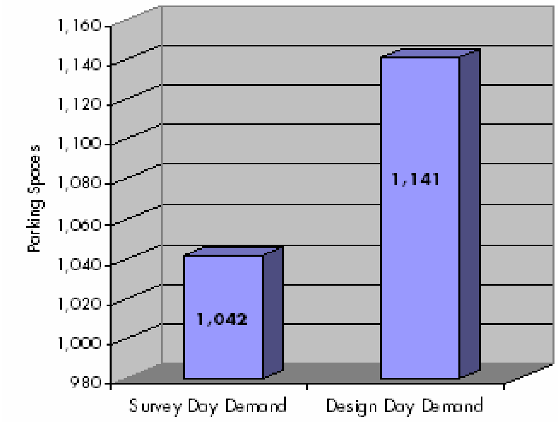
User Group	Design Day User Statistic		Demand Ratio			Design Day Demand
Visitors/Outpatient	395	x	0.98	/Outpatient	=	387
ED	130	x	0.26	/ED Visit	=	34
Physicians/Staff	1,385	x	0.52	/Physicians & Staff	=	720
			Design Day Parking Demand			1,141

Physicians/Staff include Students, Interns, and Residents

Source: Walker Parking Consultants

Based on this analysis, the current design day parking demand at OSU Medical Center is 99 more spaces than the peak observed demand. The difference between the survey day and the design day is shown in the following figure.

Figure 6: Survey Day vs. Design Day Demand



Source: Walker Parking Consultants

CURRENT DESIGN DAY PARKING ADEQUACY

Parking adequacy is determined by the ability of the parking supply to accommodate the design day parking demand. By comparing the current design day peak hour parking demand estimate to the existing effective parking supply, the current adequacy of the existing parking system can be estimated.

Table shows the current design day adequacy by user group. Overall a deficit of 28 spaces is projected during design day conditions. The deficit is projected for outpatient and visitors on the campus.

Table 32: Current Design Day Parking Adequacy

User Group	Effective Supply		Design Day Demand		Adequacy
Visitors/Outpatient	320	-	387	=	(67)
ED	40	-	34	=	6
Physicians/Staff	753	-	720	=	33
Totals	1,113	-	1,141	=	(28)

Physicians/Staff include Students, Interns, and Residents

Source: Walker Parking Consultants

FIVE YEAR CONDITIONS

The five year conditions are based on applying the demand ratios to the projected user statistics. Based on the data provided, patient volume is projected to increase 5 percent from the current to five year period, and another 5 percent from year six to year ten. Staff levels were provided for each period and used accordingly. The following table shows the five year demand based on the future user statistics.

Table 33: Five Year Parking Demand

User Group	User Statistic		Demand Ratio			Design Day Demand
Visitors/Outpatient	415	x	0.98	/Outpatient	=	407
ED	137	x	0.26	/ED Visit	=	36
Physicians/Staff	1,453	x	0.52	/Physicians & Staff	=	756
			Design Day Parking Demand			1,199

Physicians/Staff include Students, Interns, and Residents

Source: Walker Parking Consultants

Parking adequacy is determined based on the effective supply less the demand. We assume the parking supply will remain constant for the ten year period. The following table shows a projected deficit of 86 spaces within five years. Only the emergency department is projected to have adequate parking.

Table 34: Five Year Parking Adequacy

User Group	Effective Supply		Design Day Demand		Adequacy
Visitors/Outpatient	320	-	407	=	(87)
ED	40	-	36	=	4
Physicians/Staff	753	-	756	=	(3)
Totals	1,113	-	1,199	=	(86)

Physicians/Staff include Students, Interns, and Residents

Source: Walker Parking Consultants

TEN YEAR CONDITIONS

The ten year conditions are similarly calculated based on applying the demand ratios to the projected user statistics. Patient volume is projected to increase 5 percent from the five year period, and staff levels are as provided by the hospital. The following table shows the ten year demand based on the future user statistics.

Table 35: Ten Year Parking Demand

User Group	User Statistic		Demand Ratio			Design Day Demand
Visitors/Outpatient	436	x	0.98	/Outpatient	=	427
ED	144	x	0.26	/ED Visit	=	37
Physicians/Staff	1,513	x	0.52	/Physicians & Staff	=	787
			Design Day Parking Demand			1,251

Physicians/Staff include Students, Interns, and Residents

Source: Walker Parking Consultants

Parking adequacy is determined based on the effective supply less the demand. We assume the parking supply will remain constant for the ten year period. The following table shows the deficit growing to 138 spaces within ten years. The greatest deficit is found in the visitor/outpatient category.

Table 26: Ten Year Parking Adequacy

User Group	Effective Supply		Design Day Demand		Adequacy
Visitors/Outpatient	320	-	427	=	(107)
ED	40	-	37	=	3
Physicians/Staff	753	-	787	=	(34)
Totals	1,113	-	1,251	=	(138)

Physicians/Staff include Students, Interns, and Residents

Source: Walker Parking Consultants

GRIFFIN COMMUNICATIONS MEDIA CENTER

Griffin Communications, L.L.C. plans to build a 50,000 square feet state-of-the-art media center on the parcel of land in the Brady Village District bound by Cameron Street to the south, Cincinnati Avenue to the east, Boston to the west, and the interstate highway to the north (block 5). The Griffin Communications Media Center will house employees of the company's Tulsa properties that includes The News on 6, CW 12/19 and Griffin New Media, which operates the company's television websites. The building design will provide space for 186 employees, access for visitor tours and space where community groups can hold meetings. The estimated completion date is June 2008.

Walker estimates that the parking requirement for the unique office building is 200 ± spaces.

CONCEPT100 ART CENTER

The Concept100 will be a visual arts center in the Brady Village District and an initiative of the Arts & Humanities Council of Tulsa. Located in the Mathews Warehouse at 200 E. Brady, the dominant feature on the first floor will be galleries to exhibit the artwork of local, studio, regional, national, and international artist. Ground level may consist of a coffee house, a community meeting space, film and art exhibitions studios, a gallery shop, and office and storage space. The second level will primarily be studio workspaces, classrooms and resident spaces for visiting artists. Pending structural analysis, space will be leased for a rooftop restaurant.

The demand for parking will vary based on time of day and day of week, and whether a popular show or exhibit is taking place. Based on the conceptual ideas for the development, it is estimated that 150 to 200 dedicated parking spaces will be required. The parking requirements could increase by 50 to 75 spaces if the rooftop restaurant comes to fruition.

TULSA PERFORMING ARTS CENTER (PAC)

The PAC Trust owns land immediately east of the PAC and has long-term plans to build a 1,200-seat theater along with a 300+ space parking structure on the site. The estimated parking requirement for the theater and existing PAC land uses would be approximately 600 spaces.

SUMMARY OF FUTURE PARKING CONDITIONS

In summary, the methodology employed by Walker to project future demand combines the baseline demand which is equal to the observed peak weekday occupancy level, and any incremental change or growth in demand resulting from new land uses entering the study area. The baseline and incremental increase in demand are added together and then compared to the existing effective parking supply to determine the overall parking adequacy. A summary of projected incremental increase in future parking demand according to block and development is presented in the following table.

The incremental increase in peak weekday parking demand is projected to be 3,078 spaces in one to five years and 2,655 in six to ten years. The total increase in parking demand is for 5,733 spaces in ten years.

Table 27: Summary of Incremental Change in Parking Demand

Item	Demand Generator	Block No.	Relocated Demand	Projected Change in Parking Demand 5 Years	10 Years
1	City Government Consolidation	28	1,451	-	-
2	One Technology Center (8th floor)	28	-	241	241
3	Bank of Oklahoma Tower	28		250	250
4	Performing Arts Center Expansion	35	-	-	600
5	BOK Arena	76	-	-	-
6	Tulsa Convention Center Expansion	78	-	319	319
7	Tulsa Convention Center Lost Spaces	78	-	-	-
8	Tulsa Community College Lost Spaces	70	-	-	-
9	Tulsa Community College Expansion	69	-	142	246
10	KMO Development (Apartments)	68	-	48	48
11	KMO Development (Retail)	68	-	101	101
12	KMO Development (Hotel)	71	-	210	210
13	KMO Development (Apartments)	71	-	102	102
14	Mayo Lofts	44	-	119	119
15	Mayo Hotel	44	-	96	96
16	Mayo Building	44	-	160	160
17	201Building	42	-	44	139
18	Adams Building	43	-	15	48
19	The Secure Agent	43	-	50	159
20	The Pythian Building	44	-	6	19
21	First Place Tower	45	-	92	291
22	Atlas Life Building	46	-	58	183
23	Bank of America Center	50	-	60	191
24	The Oil Capital	51	-	21	66
25	Park Centre	51	-	72	227
26	Amco South	52	-	13	42
27	Philcade	52	-	13	42
28	Towercade	52	-	140	443
29	Petroleum Club	56	-	35	110
30	Two West Sixth Street	56	-	41	130
31	One Main Plaza	56	-	8	25
32	Two Main Plaza	56	-	8	25
33	Enterprise	57	-	112	355
34	Avanti	68	-	66	208
35	OSU Medical Center Campus	80	-	86	138
36	Griffin Communications Media Center	5	-	200	200
37	Concept100 Art Center	17	-	150	200
Projected Total Change in Parking Demand			**1,451**	**3,078**	**5,733**

Source: Walker Parking Consultants 2007

The same methodology used by Walker to project future demand for the entire study area is applied to study areas A, B and C. The baseline and incremental increase in demand are added together and then compared to the existing effective parking supply to determine the overall parking adequacy for each area.

Taking into account the various developments and building occupancy assumptions, Walker has estimated each area's future conditions for five and ten years. The following table summarizes these findings.

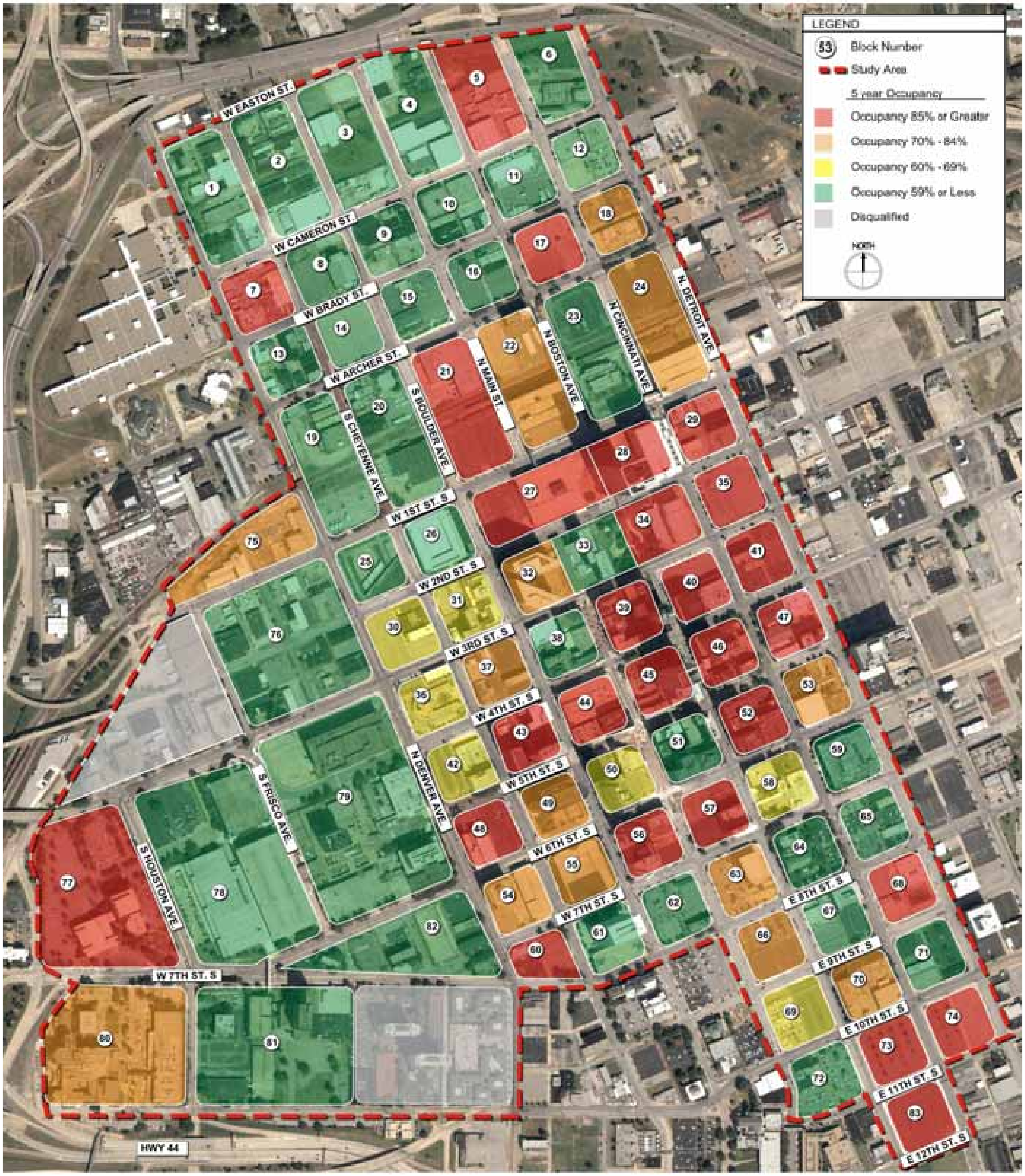
Table 38: Future Parking Adequacy

Study Area	District	Current Adequacy	5-Year Adequacy	10-Year Adequacy
A	CBD	6,006	3,800	1,948
B	Brady Village	892	515	465
C	TCC	885	(89)	(269)
Total Adequacy		**7,783**	**4,226**	**2,144**

To show the projected parking demand on a block-by-block basis, we developed a five and ten year map using color coding to depict the future parking demand. Red blocks indicate parking occupancy above 85 percent and nearing optimum utilization. Orange indicates parking occupancy is increasing, but less than 85 percent. Yellow indicates parking is being used, but occupancy is lower than 69 percent. Green indicates available parking in not a concern, with occupancy levels at 59 percent or lower.

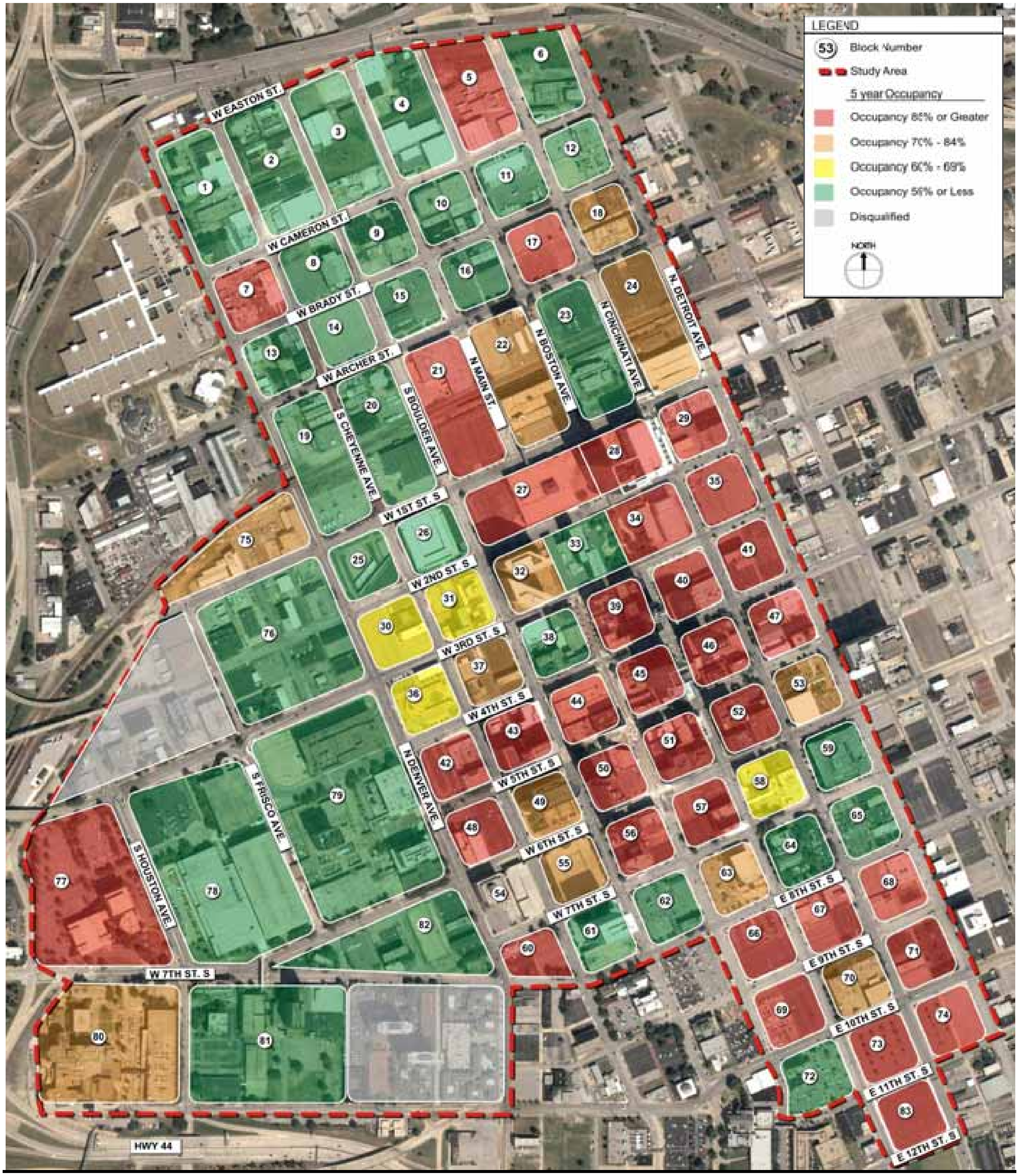
As shown in Figures 7 and 8, despite the total surplus projected in study areas A and B and marginal deficit in area C, there are localized pockets of demand that have insufficient parking supply. This is difficult to comprehend when solely viewing the quantified projections for the total downtown study area. Therefore, the following section addresses the localized parking conditions to better gauge where opportunities may exist to develop additional structured public parking in downtown Tulsa.

Figure 7: Five Year Projected Parking Conditions



MARCH 7, 2008

Figure 8: Ten Year Projected Parking Conditions



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LOCALIZED AREA PROJECTION (LAP)

In addition to considering each block and an area-specific analysis, Walker considered the parking adequacy of each specific block based on the total adequacy of the eight closest surrounding blocks. This localized area projection (LAP) provides a more comprehensive understanding of each block's parking sufficiency.

This analysis takes into account how parking is shared between blocks, and the fact that people will generally park and walk beyond one block to reach their destination. By considering the local area surrounding each block, we can identify areas beyond a single block that are projected to have a deficit parking supply.

Our survey and observations in the area indicate that employees in downtown Tulsa are willing to park approximately two blocks from their destination. This was especially noted on the border of Brady Village and the Central Business District, as downtown employees often seek lower priced or free parking alternatives in Brady Village and walk south to 1st Street. Within the CBD we noted similar behavior, albeit to a lesser extent. Due to the availability of parking in the study area, parkers have become accustomed to parking within view or approximately 1 block of their destination. The abundance of surface parking in the TCC District affords students and employees with proximate parking supply to the primary destinations. Similar to Brady Village, it was determined through field observations and surveys that a two block walking distance was deemed acceptable by parkers in the TCC District.

The table on the following page summarizes the localized area projection (LAP) for the study area. Note that the results for each block should be evaluated separately and should not be added together.

Table 39: Localized Area Projections – 5 and 10 Year

Block	Localized 5-Year Adequacy	Localized 10-Year Adequacy	Block	Localized 5-Year Adequacy	Localized 10-Year Adequacy	Block	Localized 5-Year Adequacy	Localized 10-Year Adequacy
1	215	215	29	(183)	(1,116)	57	118	(492)
2	362	362	30	363	363	58	187	(246)
3	371	371	31	368	368	59	253	58
4	20	20	32	274	274	60	798	798
5	(200)	(200)	33	(520)	(520)	61	334	228
6	80	80	34	(517)	(1,450)	62	249	1
7	310	310	35	(519)	(1,452)	63	290	33
8	591	591	36	1,083	955	64	315	88
9	685	685	37	(156)	(291)	65	323	238
10	118	68	38	(404)	(595)	66	391	369
11	(76)	(126)	39	(462)	(643)	67	21	(77)
12	(234)	(284)	40	(161)	(1,268)	68	(130)	(215)
13	337	337	41	(92)	(1,092)	69	312	263
14	494	494	42	995	867	70	(94)	(245)
15	725	725	43	(169)	(375)	71	(334)	(472)
16	525	475	44	(331)	(700)	72	178	120
17	571	521	45	(518)	(1,072)	73	(138)	(222)
18	242	192	46	(268)	(744)	74	(315)	(397)
19	467	467	47	(204)	(466)	75	91	91
20	545	545	48	1,726	1,598	76	2,158	2,107
21	750	750	49	36	(276)	77	981	981
22	(89)	(139)	50	(285)	(891)	78	3,010	3,010
23	(36)	(86)	51	(532)	(1,323)	79	3,175	3,124
24	(350)	(400)	52	(227)	(834)	80	166	166
25	467	467	53	(63)	(325)	81	632	632
26	427	427	54	798	798	82	563	166
27	470	470	55	432	255	83	150	68
28	21	(912)	56	293	(122)			

Source: Walker Parking Consultants

The purpose of this type of analysis is to use the results as a guide to more specifically identify where the future localized parking needs are likely to occur. The areas that are projected to have a parking deficit coincide with the areas that Walker identified as having the potential for material change in land uses and/or building occupancy levels. Although the aggregate projections show an overall surplus of parking for the entire study area, the localized area projections show a potential need that could range between 100± to 1,452± parking spaces in multiple locations.

Note that even though the projections show a need for less than 300 spaces, it is often financially and operationally inefficient to construct a parking facility with such a low capacity. Walker recommends that if structured parking is going to be built that the TPA consider building with the intention of realizing the highest and best use of the parcel and maximizing the design capacity.

FUTURE PARKING RECOMMENDATIONS

The adopted position of the City set forth in the Downtown Public Investment Master Plan (2006) calls for the development of structured parking that not only satisfies current demand, but influences development by providing for future needs. This position recognizes that parking may be used as an instrument to encourage economic development and may be constructed without quantifiable justification of immediate or future need. Most communities do not have the fiscal stability of a solvent parking system to support such a policy and typically are reactionary when it comes to addressing public parking needs. It is Walker's professional opinion that building parking structures in an urban environment with little or no pent-up demand may yield a low absorption rate in the short term, but may also be the influencing factor that draws a new tenant to the downtown community or enables an existing tenant to expand its operation.

At present, the total parking supply when compared to the existing demand is adequate in the study area. There would be no need for additional parking supply if stagnate market conditions were anticipated during the next ten years. The research conducted by Walker identifies a surplus of parking supply in each study area, albeit not always in a convenient location for existing downtown tenants. For the purposes of this analysis, convenient parking in downtown Tulsa is defined to be within a two block radius (600 feet) of a desired destination.

Within five years the total downtown parking demand is projected to increase by an incremental amount of 3,078 spaces. Much of the new parking demand will likely be absorbed into the existing parking surplus. However, our analysis of localized areas identifies multiple regions in the Central Business District with projected future needs that range between 7 and 532 spaces. *Walker recommends that the TPA adopt a goal of constructing a minimum net gain of 500 structured parking spaces within the next five years.* The actual size, location and timing will be dependant upon the funding capability of the TPA.

Within six to ten years the total downtown parking demand is projected to increase by an incremental amount of 2,655 spaces. Once again, the available parking supply will likely accommodate a portion of the incremental increase in parking demand, but the localized areas near sources of increased parking demand will likely experience a significant deficit in parking supply. Our analysis of localized areas identifies multiple zones with projected future needs that range between 300 to 1,452 spaces. *Walker recommends that the TPA adopt a goal of constructing a minimum net gain of 1,400 structured parking spaces within six to ten years.* The size, location and timing will be dependant on the funding capacity of the TPA.

It is Walker's professional opinion based on existing and projected parking needs, that study area A (Central Business District) should receive priority for a public parking development, followed by study area C (Tulsa Community College District), then study area B (Brady Village District). This judgment is made based on Walker's understanding of the burgeoning areas in downtown and the rate at which new sources of parking demand are anticipated to come online.

It is important to recognize that additional parking supply is not always the solution when an urban community is addressing negative parking perceptions. Although parking a vehicle in a lot or garage is not the ultimate purpose for driving downtown, drivers do have expectations of the experience that if not met, can cause negative perceptions that may impact future downtown patronage. Downtown Tulsa is in the process of improving roadways, pedestrian walkways, sidewalk streetscape, and its wayfinding system. All of those items can greatly impact the perception of parking conditions in an urban community.

SITE ANALYSIS

The objectives of this site planning analysis are to determine the advantages and disadvantages of constructing parking on various sites within the defined study area and to recommend the most appropriate site(s) to the TPA.

By carefully planning the location of parking garages, and including good quality standards and well thought out design features, the garages can be used to set an example for development, and an image for the downtown area the parking garage serves. For example, a proliferation of open surface lots with little visual attractiveness, poor lighting, and no thought to pedestrian routes produces an uninviting image and encourages the wasteful use of land. In contrast, strategically located and consolidated parking facilities that include attractive landscaping, lighting, signage, and well designed pedestrian routes instill a sense of pride, value, and safety and present a positive image.

Parking is a very important element of almost every transportation master plan. The location of parking facilities is especially vital because it determines both the ending and starting points for vehicles. It is where the "vehicle to pedestrian" mode change occurs. Parking is often located on the perimeter of the downtown area to minimize the amount of vehicular traffic in the core downtown area. This outer placement approach is often effective in reducing vehicular traffic. However, in most communities there exists a prevailing unwillingness to walk more than one to two city blocks, which limits the perimeter range. When considering location of a future parking garage it is imperative that the average pedestrian walking distance and travel time to key destinations are considered and factored into the site selection process.

ACCEPTABLE WALKING DISTANCE

Acceptable walking distance varies depending on the specific user group, such as visitor or employee. Normally, employees are more willing to walk further distances on a daily basis in exchange for a guaranteed supply of parking spaces to choose from, and visitors expect proximate parking to their destination. Thus, just looking at the total number of spaces vs. the total parking demand may not provide enough information to determine if the parking supply and location is satisfactory.

Factors Impacting Acceptable Walking Distance

- Climate
- Perceived Security
- Typical User
- Lighting
- Walking Environment
- Terrain
- Health

To evaluate parking and the impact of the walking distance, Walker developed a Level of Service ("LOS") rating system for evaluating appropriate walking distances based on specific criteria. The LOS is ranked from "A" to "D" as follows:

- LOS "A" is considered the best or ideal
- LOS "B" is good
- LOS "C" is average
- LOS "D" is below average but minimally acceptable.

Table 40: Level of Service Conditions

Level of Service Conditions	A	B	C	D
Climate Controlled	1,000 ft	2,400 ft	3,800 ft	5,200 ft
Outdoor/Covered	500	1,000	1,500	2,000
Outdoor/Uncovered	400	800	1,200	1,600
Through Surface Lot	350	700	1,050	1,400
Inside Parking Facility	300	600	900	1,200

Source: "How Far Should Parkers Have to Walk?" by Mary S. Smith and Thomas A. Butcher, *Parking* September 1994

Average Walking Speeds and Distances

Avg. Walking Speed = 3 MPH

1 Minute = 264 feet
5 Minutes= 1,320 feet
10 Minutes= 2,640 feet
15 Minutes= 3,960 feet
20 Minutes= 5,280 feet
25 Minutes= 6,600 feet
30 Minutes= 7,920 feet

Applying the LOS ratings to a downtown area is done by considering each user group and what parking/walking experience is acceptable. Typical user groups in a downtown area include:

- Employees
- Residents
- Visitors

We recommend the TPA consider providing LOS B to employees when planning for future parking developments. Naturally, some employee groups will be required to walk further than others to find parking, but the generally accepted objective should be to provide public parking within close proximity to core areas of employee demand.

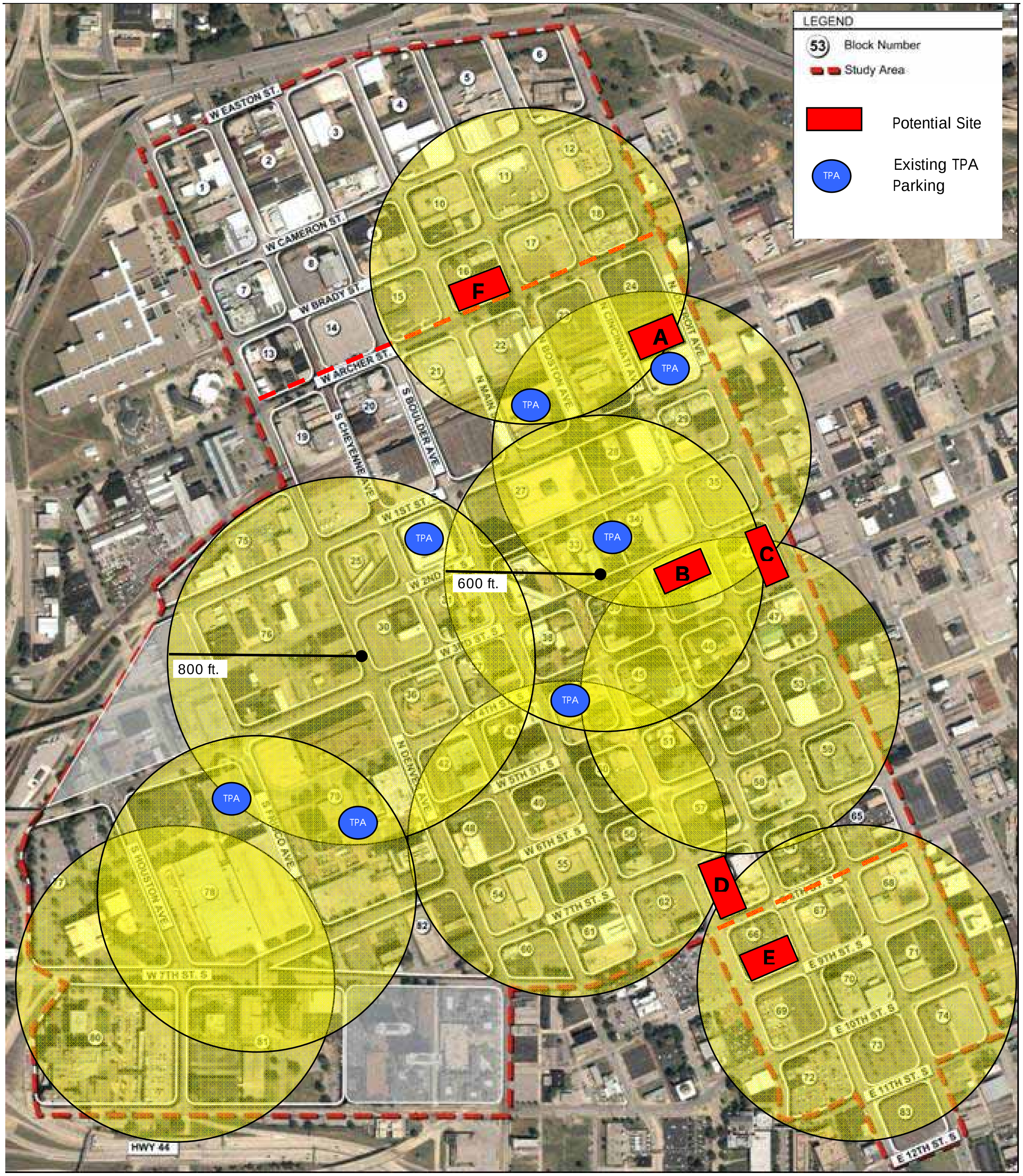
Because visitors are most likely unfamiliar with the area and/or are short-term parkers, we recommend the City continue to provide a walking distance LOS A to visitors through on-street parking meters. At present, the City does provide approximately 1,645 on-street parking spaces strategically placed throughout the downtown area with the intention of serving short-term parkers.

Residential parking in most urban markets is included with the purchase or lease of a housing unit. Various expectations exist in each market, but for this analysis we assume that residents in downtown Tulsa will be provided or offered the right to park within a 300 to 400 foot radius or a LOS A.

The final decision is a policy decision for the TPA. While it may be desired to provide all parking at LOS A and B for all user groups, this would require structured parking on nearly every block which is financially impractical and nearly impossible to accomplish without the removal or displacement of existing businesses. In most urban communities the strategy is to provide public parking in an area that serves the greatest number of people from all user groups. The TPA currently has well placed parking facilities for the existing and future land uses.

The following map illustrates a LOS walking distance of 600 feet from the center of several core areas of weekday demand and 800 feet for areas of special event demand. Walker considers the areas of each circle that overlap potential development zones. This approach enables us to focus in on areas of downtown that may be suitable for new parking development(s). This approach is employed with the intent of identifying a site or multiple sites that would likely serve the greatest number of people living, visiting and working in downtown Tulsa.

Figure 9: Alternative Development Sites w/ Walking Distances



Source: Walker Parking Consultants

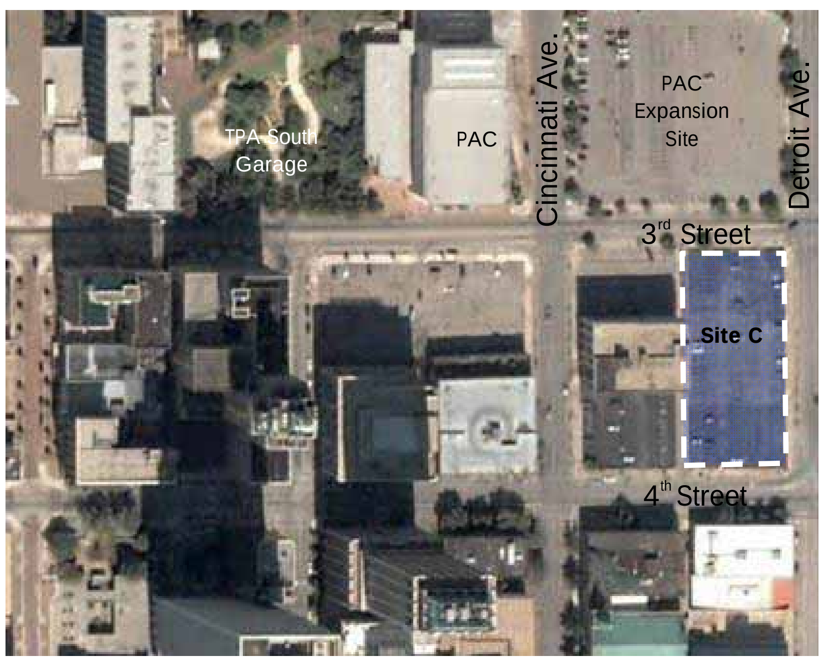
Site	**A**
Location	Adjacent to north side of One Technology Center Garage(OTC Garage)
Current Use	A 10,150 square foot one story brick building that formerly operated as a La Petite Academy and now an adult learning center.
Site Preparation	Required acquisition, demolition, and possible tenant relocation.
Parking Displacement	Private 33-space surface parking lot (Used only by current tenant)
Site Dimensions	120' x 298' = 35,760 SF
New Parking Supply	613 spaces, 6 levels (Horizontal expansion of existing garage)
Vehicular Access	Site would allow for integration with the existing OTC Garage that provides ingress and egress along 1st Street and egress along Detroit Avenue.
Primary User	Downtown employees. Potential user group includes government employees/visitors, OTC private tenants, and Bank of Oklahoma Tower tenants.
Comments	The horizontal expansion of the OTC Garage would serve to secure parking for city employees and visitors, and also reduce the risk of under serving the future parking needs of the private tenants in the OTC. Private tenant attraction and retention in the OTC is important to the City.
Aerial Photograph	

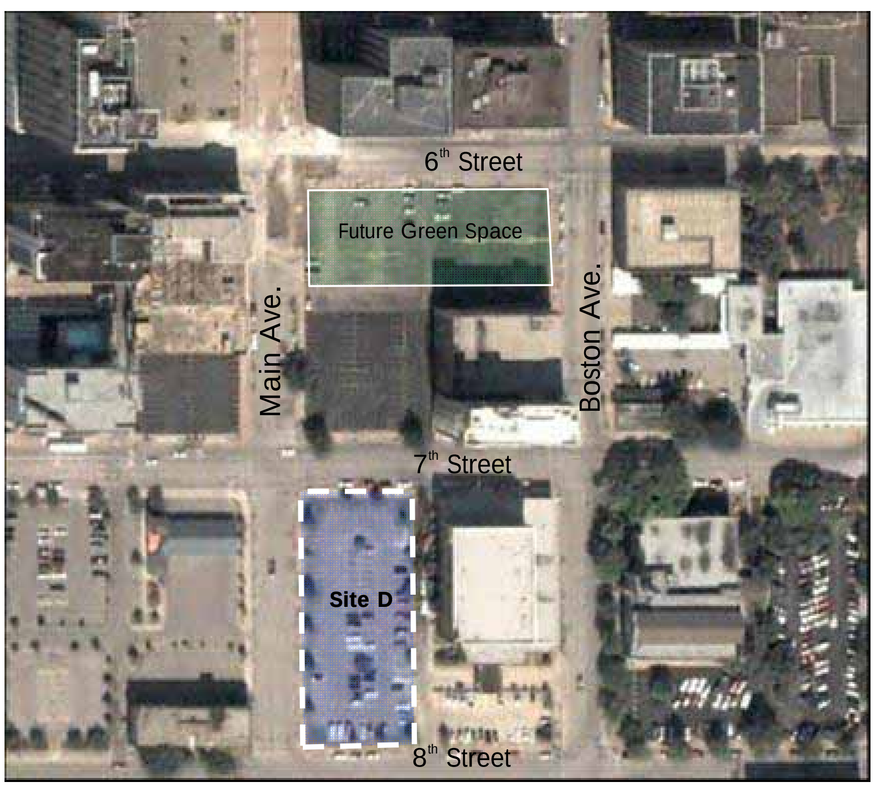
Site	B
Location	Site consists of the north half of city block bound by 3rd Street to the north, 4th Street to the south, Boston Avenue to the east, and Cincinnati Avenue to the west.
Current Use	Two surface lots located on this site with total of 169 spaces.
Site Preparation	Required acquisition.
Parking Displacement	169 public spaces (95% occupancy rate)
Site Dimensions	150' x 300' = 45,000 SF
New Parking Supply	770 spaces, 6 levels (net gain 601 spaces)
Vehicular Access	Site would allow for egress and ingress points on Boston Avenue and Cincinnati Avenue.
Primary User	Downtown employees. Proximate to the Tulsa Performing Arts Center, the Kennedy Building, Mid-Continent Tower, and the 320 S. Boston Building. Site is located approximately one block south of One Technology Center.
Comments	The development of structured public parking on this centrally located site could serve existing parking demand in the immediate area and provide parking for future downtown tenants. Freestanding parking may not be the highest and best use of this land. Integration of land uses such as retail, office, and hotel should be considered.
Aerial Photograph	

Site	**C**
Location	Site consists of the east half of the city block bound by 3rd Street to the north, 4th Street to the south, Detroit Avenue to the east, and Boston Avenue to the west. Site is adjacent to the KC Auto Hotel.
Current Use	235-space surface parking lot.
Site Preparation	Required acquisition.
Parking Displacement	235 public spaces (75% occupancy rate)
Site Dimensions	145' x 300' = 43,500 SF
New Parking Supply	745 spaces, 6 levels (net gain 510 spaces)
Vehicular Access	Site would allow for potential egress and ingress points on Detroit Avenue, 3rd Street and 4th Street.
Primary User	Downtown employees. Site in close proximity to the Tulsa Performing Arts Center, One Technology Center, Kennedy Building, and Mid-Continent Tower.
Comments	The parameter location of this site may hinder short-term use of the parking facility. All demand for the parking structure would stem from land uses to the west. Development of the site could be used as an economic development tool to encourage the East End Development.

Aerial Photograph

East End Development Concept



Site	**D**
Location	Site consists of the southwest quadrant of the city block bound by 7th Street to the north, 8th Street to the south, Boston Avenue to the east, and Main Street to the west.
Current Use	109-space surface parking lot.
Site Preparation	Required acquisition.
Parking Displacement	109 public spaces (90% occupancy rate)
Site Dimensions	300' x 150' = 45,000 SF
New Parking Supply	770 spaces, 6 levels (net gain 661 spaces)
Vehicular Access	Site would allow for potential egress and ingress points on Main Avenue, 7th or 8th streets.
Primary User	Downtown employees, students and residents.
Comments	The site dimensions are allow for an efficient parking structure The site is positioned amid existing and burgeoning development, but approximately two to three blocks from central areas of existing demand.
Aerial Photograph	

Site	**E**
Location	Site consists of the south half of the city block bound by 8th Street to the north, 9th Street to the south, Cincinnati Street to the east, and Boston Avenue to the west.
Current Use	126-space surface parking lot.
Site Preparation	Required acquisition.
Parking Displacement	126 public spaces (100% occupancy rate)
Site Dimensions	150' x 300' = 45,000 SF
New Parking Supply	770 spaces, 6 levels (net gain 642 spaces)
Vehicular Access	Site would allow for potential egress and ingress points on Main Avenue, Boston Avenue and 9th Street.
Primary User	TCC Metro Campus students, faculty, staff and visitors.
Comments	In the short-term, the site would primarily serve TCC Metro Campus. The demand base would likely diversify as infill development occurs on surrounding surface parking lots. The public parking structure could serve to enhance the TCC Metro Campus while encouraging nearby commercial development.
Aerial Photograph	

MARCH 7, 2008

Site	**F**
Location	Site consists of the south half of the city block bound by Brady Street to the north, Archer Street to the south, Boston Avenue to the east, and Main Avenue to the west.
Current Use	163-space surface parking lot.
Site Preparation	Required acquisition.
Parking Displacement	163 public spaces (95% occupancy rate)
Site Dimensions	150’ x 300’ = 45,000 SF
New Parking Supply	770 spaces, 6 levels (net gain 602 spaces)
Vehicular Access	Site would allow for potential egress and ingress points on Archer Street, Detroit Avenue, Cincinnati Avenue.
Primary User	Downtown employees and visitors.
Comments	Many of the buildings in Brady Village exhibit low occupancy density attributed to significant industrial use. There will likely be a need for structured public parking in the future as existing buildings are redeveloped and surface lots replaced by new land uses. At this time, structured parking at this site would primarily be used Monday – Friday, 8:00 AM to 5:00 PM by office employees working in the CBD. The fringe location would likely command a below market rate monthly and daily rate.
Aerial Photograph	o 

MATRIX ANALYSIS OF THE ALTERNATIVES

Each site included as a possible development site is evaluated according to how well it ranks with site selection criteria considerations. The matrix shown in Table 42, evaluates the parking alternatives on the basis of seven criteria. The points awarded for each alternative are determined first by assigning a score to each criterion. Some of the criteria, such as project cost, can be scored objectively. For subjective criteria, such as land availability, a value of 5 = excellent, down to 1 = poor, could have been awarded. Next, each criterion is weighed by assigning it points, the sum of which totals 100 points. The specific criteria used to evaluate the alternatives are as follows:

Proximity to Demand – The location of each potential development site in relation to commercial buildings that are occupied and generate demand for parking during traditional business hours. The representation of land use near each site is considered and the level of reliance a site may have on one or multiple sources of demand.

Project Cost – The project cost associated with each potential development site includes, but is not limited to property acquisition, tenant relocation, demolition, and construction. The cost per space added is considered when awarding a value to each site (Project cost divided by net spaces gained).

Land Availability – The land availability associated with each potential development site considers the existing use of the land, whether or not property acquisition is required, and the need for tenant relocation, zoning compliance, and whether or not identified redevelopment plans exist.

Future Development – The assessment of future development includes whether parking is the highest and best use of the land and if future development is planned on or adjacent to the site that may benefit or hinder the parking operation.

Revenue Potential – The potential of each site to capture new market share that results in new operating revenue from the sale of monthly, daily and special event parking services.

Traffic Impact – The traffic impact on the existing traffic patterns and what impact peak period loading and unloading may have on the surrounding street system.

Mixed-Use Potential – The potential of each site to integrate at grade level retail, restaurant and/or office space. Whether or not potential for a mixed-use parking facility exists is dependant on the type of land uses that surround the site and the existing market conditions for each type.

Table 41: Comparison of Potential Development Alternatives

Location	A OTC Expansion	B 3rd & Boston	C 3rd & Detroit	D 7th & Main	E TCC Lot	F Archer & Boston
Cost/Space [1]	$ 14,000	$ 16,000	$ 16,000	$ 14,000	$ 14,000	$ 14,000
Development Cost	$ 8,582,000	$ 12,320,000	$ 12,064,000	$ 10,780,000	$ 10,780,000	$ 10,780,000
Estimated Parcel Size (SF)	31,588	45,000	43,500	45,000	45,000	45,000
Number of Spaces	613	770	754	770	770	770
Displaced Spaces	33	169	235	109	126	163
Net Spaces Gained	580	601	519	661	644	607
Cost/Net Space Gained	$ 14,797	$ 20,499	$ 23,245	$ 16,309	$ 16,739	$ 17,759
Estimated Land Cost [2]	$ 1,000,000	$ 2,100,000	$ 1,500,000	$ 1,000,000	$ 1,000,000	$ 1,000,000
Estimated Total Project Cost	$ 9,582,000	$ 14,420,000	$ 13,564,000	$ 11,780,000	$ 11,780,000	$ 11,780,000

[1] Cost/Space includes hard and soft costs.
[2] Conceptual estimate of land cost. Range $22 - $47 per SF.

Source: Walker Parking Consultants 2007

Table 42: Site Planning Matrix Evaluation

		Alternative Sites					
Criteria	Weight	**A**	**B**	**C**	**D**	**E**	**F**
Location		OTC Expansion	3rd & Boston	3rd & Detroit	7th & Main	TCC Lot	Archer & Boston
Proximity to Demand	40%	4	5	4	4	4	3
Project Cost	20%	4	3	3	3	3	4
Future Development	10%	5	4	5	5	5	3
Land Availability	10%	2	1	3	3	3	2
Revenue Potential	10%	4	5	4	4	3	1
Traffic Impact	5%	5	4	5	4	5	4
Mixed Use Potential	5%	1	5	4	3	4	4
	100%						
STRAIGHT							
Points		25	27	28	26	27	21
Rank		5	2	1	4	2	6
WEIGHTED							
Points		3.30	3.65	3.35	3.25	3.25	2.70
Rank		**3**	**1**	**2**	4	4	6

Note: 5 = Excellent 4 = Very Good 3 = Good 2 = Fair 1= Poor

Source: Walker Parking Consultants 2007

Walker recognizes that the construction costs associated with parking facilities can vary materially based on numerous factors. It is our assumption that the Tulsa Parking Authority will seek to design a public parking structure with a fifty-year minimum useful life. The architectural treatment will be compatible with or exceed existing parking structures built by the TPA. The functional design will account for frequent patrons, such as employees, as well as infrequent patrons visiting downtown for business or entertainment. Many municipally-owned parking structures around the country have been built with a single objective which is to store vehicles at the lowest possible cost. This approach often results in a parking structure with poor durability and function with little regard given to architectural continuity. In contrast, this analysis assumes that the public parking structures built by the TPA will enhance Class A office buildings in downtown Tulsa.

SUMMARY OF SITE ALTERNATIVES ANALYSIS

The final determination of the relative attractiveness of the alternative solutions must rest with the Tulsa Parking Authority and the City of Tulsa. However, this site analysis provides a reasonable and supportable look at the criteria upon which to base such a decision. On the basis of this analysis, Site Alternatives B, A, and C are determined to be the highest-ranking potential solutions, respectively. Walker understands that the acquisition of site B is not an option for the TPA. Therefore, Walker recommends that the TPA consider either site A or C for development over the next five years. Walker recommends that the TPA consider developing public parking on either site D or E over the next six to ten years. This strategy will enable the TPA to address the immediate need for additional parking in the core CBD, while also distributing public parking supply to a region of downtown Tulsa that is anticipated to increase in building density and weekday activity.

PRELIMINARY FINANCIAL ANALYSIS

The objectives of this preliminary financial analysis are to assess the financial viability of constructing a new public parking structure in downtown Tulsa and to opine on the financial impact a new parking structure may have on the TPA. The objectives are not mutually exclusive; rather the financial viability of any new TPA-owned parking garage will greatly depend on the financial position of the TPA's combined parking system. The financial performance of the combined parking system is likely to improve during the next five years as new parking demand generators enter the market and create an increase in weekday and weekend activity. The incremental gain in net operating income will contribute to the repayment of existing and future debt issued by the TPA.

The TPA Parking System includes the following properties:

- Civic Center Parkade
- Civic Center Surface Lot
- Civic Center Underground
- Civic Center Meters
- 100 West Parking Garage
- Main Park Plaza Garage
- TPA North Garage
- TPA South Garage
- One Technology Center Garage

HISTORICAL FINANCIAL PERFORMANCE

The historical financial performance of the Parking System is analyzed to present the trends that may exist and underscore the variables that may impact future performance. The review looks closely at the annual net operating income (NOI) and debt coverage ratio (DCR) for the Parking System.

The DCR is a solvency ratio that is used to measure the ability of a parking system to service debt and is calculated by dividing the NOI by the debt service payment. The result demonstrates the amount that is available to absorb any operating losses. A DCR of one (1.0) represents a breakeven operation and anything less than one signifies an operating deficit. Higher solvency ratios indicate that an operation has a greater ability to weather changes in the market or any other unforeseen financial obstacles.

The historical annual debt coverage ratios reported for the Parking System are presented in the following table.

Table 43: Summary of Historical Debt Coverage

Year	Gross [1] Revenue	Direct Operating Expenses	Net Revenue Available for Debt Service	Debt Service Requirements Principal	Interest	Total	Coverage [2]
2006	$ 5,198	$ 2,707	$ 2,491	$ 1,130	$ 1,124	$ 2,254	1.11
2005	4,912	2,355	2,557	515	1,093	1,608	1.59
2004	3,421	2,121	1,300	495	644	1,139	1.14
2003	2,717	875	1,842	300	527	827	2.23
2002	2,929	1,463	1,466	685	715	1,400	1.05
2001	2,999	1,055	1,944	650	784	1,434	1.36
2000	2,631	887	1,744	615	820	1,435	1.22
1999	2,691	966	1,725	585	852	1,437	1.20
1998	2,590	942	1,648	555	885	1,440	1.14
1997	2,367	811	1,556	530	910	1,440	1.08

[1] Gross revenue of the "Parking System" as defined by the terms of the bond indenture. Excluded are revenue derived outside of the "Parking System."
[2] Minimum coverage per agreements 1.00x.
Note: Financial numbers presented in Thousands
Source: Tulsa Parking Authority

Table 44: Existing Debt Obligations

Bond Issue	Original Amount	Principal Outstanding 30-Jun-07	Maturity Date	Interest Rate
Series 1993	$ 4,530,000	$ 835,000	July-08	5.60%
Series 2002	$ 9,030,000	$ 8,325,000	July-18	3.40 - 4.75%
Series 2003	$ 12,315,000	$ 11,645,000	July-28	1.75 - 4.70%
Series 2004	$ 5,250,000	$ 4,700,000	July-19	1.75 - 4.25%

Source: Tulsa Parking Authority

Table 45: Gross Revenue by Source

Category	FY2007 Gross Revenue	% of Total
Monthly Parking	$ 3,819,338	79%
Visitor Parking	474,542	10%
Special Event	236,004	5%
Validation Revenue	134,476	3%
Citation/Towing	400	0%
Real Estate Rental	160,822	3%
Other Income	5,095	0%
Cash Adjustment	149	0%
Total	$ 4,830,826	100%

Source: Tulsa Parking Authority, American Parking, Central Parking, TPA System Combined for the Twelve Months Ending June 30, 2007.

The Tulsa Parking Authority's financial position is stronger than it has been in 25 years. All of the facilities are in good repair, cash reserves are at historic highs and with the construction of the new BOK Arena well under way, the prospects for new customers is positive. – *City of Tulsa, OK Annual Budget and Capital Plan Fiscal Year 2007 – 2008.*

As shown in Table 45, approximately 81 percent of the gross parking revenue is derived from long-term contract parkers. As shown in Table 46, the Main Park Plaza Garage and the TPA South Garage generate approximately 50 percent of the total gross operating revenue for the TPA.

Table 46: Gross Revenue by Location

TPA Location	FY2007 Gross Revenue	FY2007 % of Total
CC Parkade	$ 342,385	7%
CC Lot	161,845	3%
CC Underground [1]	568,675	12%
CC Meters	173,384	4%
100 West Garage	788,981	16%
Main Park Plaza Garage [1]	1,392,876	29%
North Garage [1]	383,628	8%
South Garage	1,018,759	21%
Total	$ 4,830,533	100%

Source: Tulsa Parking Authority, American Parking, Central Parking, TPA System Combined for the Twelve Months Ending June 30, 2005, 2006, & 2007.

Table 47: Operating Expenses by Location

TPA Location	FY2007 Total Expenses	FY2007 % of Total
CC Parkade	$ 320,845	16%
CC Lot	34,388	2%
CC Underground [1]	82,332	4%
CC Meters	45,993	2%
100 West Garage	350,526	18%
Main Park Plaza Garage [1]	497,245	25%
North Garage [1]	228,037	11%
South Garage	439,940	22%
Total	$ 1,999,306	100%

Source: Tulsa Parking Authority, American Parking, Central Parking, TPA System Combined for the Twelve Months Ending June 30, 2005, 2006, & 2007.

Table 48: Net Operating Income by TPA Location

TPA Location	FY2007 NOI	FY2007 % of Total
CC Parkade	$ 21,540	1%
CC Lot	$ 127,457	5%
CC Underground	$ 486,343	17%
CC Meters	$ 127,391	4%
100 West Garage	$ 438,455	15%
Main Park Plaza Garage	$ 895,631	32%
North Garage	$ 155,591	5%
South Garage	$ 578,819	20%
Total	$ 2,831,227	100%

Source: Tulsa Parking Authority, American Parking, Central Parking, TPA System Combined for the Twelve Months Ending June 30, 2005, 2006, & 2007.

CHANGES TO THE PARKING SYSTEM

It is anticipated that the completion of the new BOK Center and the Tulsa Convention Center renovation will occur by September of 2008. These attractions, combined with the Tulsa Performing Arts Center, Oklahoma Jazz Hall of Fame, Blue Dome District and Brady Village Entertainment District should create a material increase in daily and special event visitors to the core downtown area of Tulsa.

At present, the TPA Parking System generates approximately 17 percent of its gross revenue from short-term patrons. Of the short-term parking revenue, approximately 72 percent is attributed to daily visitors and the remaining 28 percent to special events. Based on the known projects that are currently planned or under construction in downtown Tulsa, it is Walker's professional opinion that during the next ten years the TPA will likely realize a greater percentage of its gross parking revenue from short-term patrons. In particular, an increase in the number of special event days and the number of attendees per event provide an opportunity for the TPA to increase utilization and revenue at select properties during traditionally off-peak periods.

A material increase in daily visitor parking demand to downtown Tulsa may occur at a slower pace in comparison to special event demand. At present, operating reports show that downtown visitors regularly park in the TPA South Garage, Main Park Plaza Garage, and Civic Center complex. The daily use of the TPA South Garage and Main Park Plaza Garage is anticipated to remain steady, while the Civic

Center complex is anticipated to materially decrease due to the relocation of City Hall. Once City Hall relocates to One Technology Center, it is likely that most City visitors will prefer park in the PAC Lot and on-street. The TPA will not receive visitor parking revenue from the PAC Lot or on-street meters. Therefore, a significant portion of visitor parking revenue that had historically been attributed to City Hall activity and documented at Civic Center Parkade, Lot and Meters, will no longer be collected by the TPA. Although the project timing is undetermined, a future opportunity exists to recapture parking revenue generated by City Hall visitors when the PAC Lot is used for the PAC expansion. Approximately 150 visitor spaces in the PAC Lot that are likely to turn on average 4 times per day could be redirected to park in the OTC Garage.

Walker modeled plausible changes to the parking system based on the results of the Supply and Demand Analysis to determine the estimated financial impact to the TPA Parking System. The increase in event parking demand along with moderate increases in visitor demand results in the potential for the TPA to increase annual gross parking revenue by approximately $1.4 million.

Table 49: Potential Changes to TPA Gross Operating Revenue

	FY2007		FY2009 [4]	
Category	Gross Revenue	% of Total	Gross Revenue	% of Total
Monthly Parking [1]	$ 3,819,338	79%	$ 3,898,902	63%
Visitor Parking [2]	474,542	10%	522,084	8%
Special Event [3]	236,004	5%	$ 1,479,000	24%
Validation Revenue	134,476	3%	134,476	2%
Citation/Towing	400	0%	400	0%
Real Estate Rental	160,822	3%	168,863	3%
Other Income	5,095	0%	5000	0%
Cash Adjustment	149	0%	0	0%
Total	$ 4,830,826	100%	$ 6,208,725	100%

1. Monthly parking assumes increased monthly parking in TPA North and OTC Garage. Monthly parking rates of $70 for exiting OTC tenants, $86 for new tenants, and $95 for reserved.
2. Visitor parking accounts for reduction in activity at the CC Complex and increase in visitor activity at the OTC Garage. Average hourly is $2.00.
3. Special event parking accounts for downtown festivals and new event demand generated by the BOK Center. A flat event parking rate of $5 per vehicle applies to all CC Complex parking, West Garage, and South Garage. A flat event parking rate of $4 per vehicle applies to OTC Garage and Main Park Plaza Garage.
4. Assumed stabilization of monthly, transient and event demand occurs in FY2009.

MARCH 7, 2008

NEW PUBLIC PARKING

Sites A, B and C are identified as suitable locations for future public parking supply based on the results of the Alternative Site Analysis. All three potential development sites in downtown Tulsa exhibit advantages and disadvantages with regard to site acquisition, construction cost, operating expenses and potential operating income. For the purposes of this analysis, Walker provides preliminary financial projections of sites A, B and C to further differentiate the three alternatives. The opinion of the projected financial performance of each alternative is predicated on Walker's assessment of future parking market conditions with a focus on burgeoning demand, competition, and rates.

Shown in Table 50, located on the following page, is a comparison of stabilized financial projections for alternative sites A, B and C. The comparative financial analysis shows that site A, the horizontal expansion of the One Technology Center Garage (OTC Garage), is the most likely parking development to be financially solvent at stabilization. This is due, in part, to the proximate location of Site A to the new City Hall building and the savings in overall project cost associated with a horizontal expansion of an existing parking facility.

Table 28: Comparison of Potential Development Alternatives

	Alternatives [1]		
Site	A [2]	B	C
Description/Location	OTC Expansion	3rd & Boston	3rd & Detroit
Total Spaces Constructed	613	770	754
Net Spaces Gained	580	601	519
PROJECTED OPERATING REVENUE			
Monthly	$ 1,189,000	$ 995,000	$ 779,000
Transient - Daily	209,000	104,000	35,000
Special Event	52,000	61,000	16,000
Potential Gross Revenue	$ 1,450,000	$ 1,160,000	$ 830,000
Less Collection& Vacancy Loss	15,000	12,000	8,000
Less Credit Card Processing Fees	3,000	3,000	2,000
Projected Effective Gross Revenue	**$ 1,432,000**	**$ 1,145,000**	**$ 820,000**
PROJECTED OPERATING EXPENSE			
Labor- Taxes & Benefits	$ 104,000	$ 104,000	$ 82,000
Management Fee	20,000	20,000	20,000
Utilities - Electric & Telephone	76,000	37,000	35,000
Insurance - GL/GKLL	35,000	15,000	15,000
Supplies	15,000	10,000	7,000
Routine Maintenance	52,000	39,000	39,000
Contracted Services	20,000	16,000	20,000
Sales Tax - Gross Receipts	109,000	87,000	62,000
General Expenses	1,000	1,000	1,000
Total Operating Expense	**$ 432,000**	**$ 329,000**	**$ 281,000**
Projected Net Operating Income Before Reserve Fund	$ 1,000,000	$ 816,000	$ 539,000
Structural Repairs & Replacement (Reserve Fund)	$ 122,000	$ 58,000	$ 57,000
Projected Net Operating Income	**$ 878,000**	**$ 758,000**	**$ 482,000**
Projected Debt Service Payment ($5M Contribution) [3]	$ 399,000	$ 821,000	$ 747,000
Projected Debt Service Coverage Ratio	2.20	0.92	0.65
Projected Surplus/(Deficit)	479,000	(63,000)	(265,000)
Projected Debt Service Payment ($2M Contribution) [3]	$ 661,000	$ 1,083,000	$ 1,008,000
Projected Debt Service Coverage Ratio	1.33	0.70	0.48
Projected Surplus/(Deficit)	217,000	(325,000)	(526,000)
Projected Total Project Cost [4]	$ 9,582,000	$ 14,420,000	$ 13,564,000
Term	20 Years	20 Years	20 Years
Rate	6.00%	6.00%	6.00%
Type of Financing	Revenue Bond	Revenue Bond	Revenue Bond

[1] Table Shows Projected Financial Performance at Stabilization (3rd Year) for Each Alternative

[2] Total of 1,625 Parking Spaces in the OTC Garage After Expansion (613 + 1,012 = 1,625)

[3] Assume Parking Revenue Bonds Issued, 20-Year Term, 6.0% Interest Rate. All Figures are Rounded (1,000)

[4] Projected Total Project Cost based on Construction Cost, Land Cost and Capacity Assumptions

DEVELOPMENT COSTS

Development costs of parking facilities vary widely. The total project cost most often includes, but is not limited to, land acquisition costs, construction costs, and soft costs. Structured parking costs typically range anywhere from $8,000 to $30,000 or more per space on depending on the project particulars. The construction cost to build above grade structured parking in Tulsa is estimated at [4]$14,000 per space for site A. This estimate includes soft costs of 20 percent, but excludes land cost. There are structural efficiencies gained when expanding a parking facility horizontally, but there also exist unique complexities that can negate any major cost savings.

The low end of the construction cost range of $8,000 to $30,000 will likely buy a simple concrete parking structure with limited aesthetical appeal. Characteristics of a facility at the high end of this range would likely include extensive architectural treatments, the construction of an inefficient facility on a difficult site, and / or the construction of a facility that has below grade parking spaces. Costs closer to the low end of the range are more common. An owner who desires to develop an architecturally significant structure and / or a structure that functions at a high level of services will spend more on a parking structure than an owner unconcerned with architecture and / or function.

According to Walker's research and data compiled by R.S. Means, one of North America's leading supplier of construction cost information; the construction cost per square foot for a parking ramp has steadily increased over the past five years. From 2003 to 2007, hard costs have increased by approximately 17 percent for above-grade and approximately 21 percent for below-grade parking construction. Concrete prices are expected to continue to increase spurred by the ongoing increases in cement, aggregate and the fuel necessary to mine or extract these components. The recent slowdown in the residential construction industry may moderate concrete price increases, but the impact of ongoing construction overseas may more than offset these influences.

Located in the Table 51 and Table 52 are historical construction costs for above and below grade parking in the United States.

[4] Average design efficiency per space is 350 square feet. The 2007 reported average construction cost per square foot for above grade parking is $37.72 in the Dallas, Denver and Kansas City markets (Dallas =$33.68, Denver = $38.14, Kansas City = $41.34, Average of three markets = $37.32). The soft costs are estimated at 20% of construction costs. .

Table 51: Construction Costs for Above Grade Parking Structure

Hard Costs/SF	Parking Ramp (Above Grade) 2007	2006	2005	2004	2003	Overall Trend Rate Annual, Compound
Atlanta	$ 35.85	$ 33.48	$ 31.16	$ 30.00	$ 29.79	4.7%
Baltimore	37.21	34.79	32.17	30.57	30.32	5.3%
Boston	46.28	43.29	40.04	38.47	38.24	4.9%
Chicago	45.43	41.83	38.73	37.78	37.77	4.7%
Cleveland	40.34	37.60	35.08	34.19	34.15	4.3%
Dallas	33.68	31.61	29.25	28.20	28.13	4.6%
Denver	38.14	35.88	33.24	32.05	31.89	4.6%
Detroit	42.11	40.18	37.13	35.86	35.78	4.2%
Houston	35.49	32.84	30.26	29.10	29.09	5.1%
Kansas City	41.34	38.76	35.88	34.12	33.82	5.1%
Los Angeles	42.91	40.00	37.06	36.23	35.74	4.7%
Miami	34.81	32.43	30.19	29.13	28.10	5.5%
Minneapolis	45.03	42.02	39.07	37.93	37.64	4.6%
New Orleans	34.73	32.36	29.98	28.85	28.83	4.8%
New York City	52.49	49.40	45.94	44.82	44.09	4.5%
Philadelphia	45.83	42.84	39.42	37.50	37.04	5.5%
Phoenix	35.81	32.81	30.43	29.40	29.36	5.1%
Pittsburg	39.66	37.52	34.67	33.62	33.32	4.5%
Portland, Or.	40.98	38.69	35.98	34.87	34.85	4.1%
St. Louis	41.66	38.31	35.43	34.19	34.01	5.2%
San Diego	41.82	38.95	36.23	35.10	35.08	4.5%
San Francisco	48.84	45.58	42.40	41.34	41.10	4.4%
Seattle	41.74	39.02	36.44	34.82	34.38	5.0%
Washington, D.C.	39.34	36.51	33.62	31.84	31.82	5.4%
Winston-Salem, NC	31.72	28.69	26.67	25.02	24.94	6.2%
Average	$ 40.53	$ 37.82	$ 35.06	$ 33.80	$ 33.57	4.8%

Source: Walker research, R.S. Means 2003 - 2007

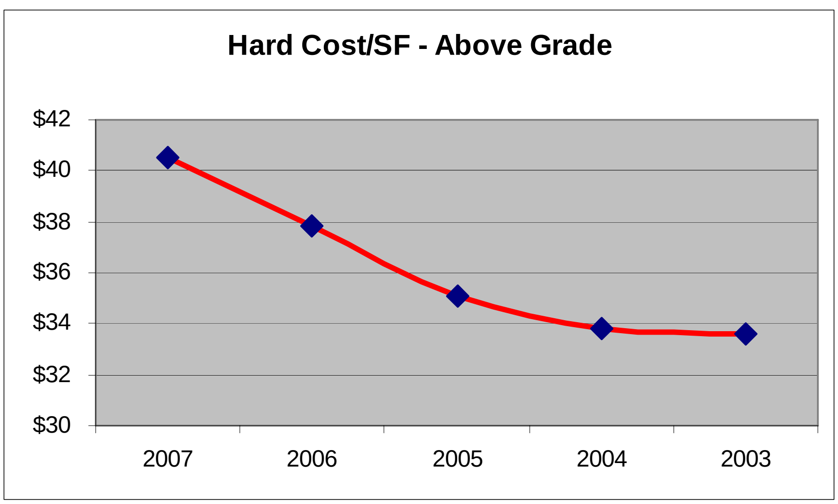
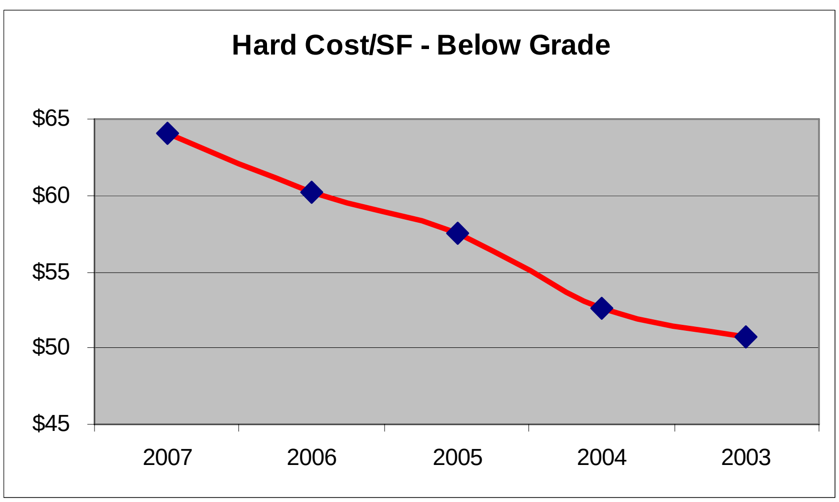


Table 52: Construction Costs for Below Grade Parking Garage

	Underground Parking (Below Grade)					
Hard Costs/SF	**2007**	**2006**	**2005**	**2004**	**2003**	**Overall Trend Rate Annual, Compound**
Atlanta	$ 56.63	$ 53.28	$ 51.14	$ 46.69	$ 45.07	5.9%
Baltimore	58.79	55.37	52.79	47.57	45.87	6.4%
Boston	73.11	68.90	65.72	59.86	57.85	6.0%
Chicago	71.78	66.57	63.56	58.56	57.14	5.9%
Cleveland	63.73	59.84	57.58	53.20	51.66	5.4%
Dallas	53.21	50.30	48.01	43.88	42.55	5.7%
Denver	60.25	57.10	54.56	49.86	48.24	5.7%
Detroit	66.52	63.95	60.94	55.80	54.12	5.3%
Houston	56.06	52.27	49.66	45.28	44.01	6.2%
Kansas City	65.31	61.69	58.89	53.09	51.16	6.3%
Los Angeles	67.78	63.65	60.82	56.37	54.07	5.8%
Miami	54.99	51.61	49.55	45.34	42.50	6.7%
Minneapolis	71.14	66.87	64.13	59.02	56.94	5.7%
New Orleans	54.86	51.49	49.20	44.76	43.61	5.9%
New York City	82.93	78.61	75.40	69.75	66.70	5.6%
Philadelphia	72.41	68.18	64.70	58.35	56.03	6.6%
Phoenix	56.57	52.21	49.95	45.75	44.41	6.2%
Pittsburg	62.65	59.72	56.89	52.31	50.40	5.6%
Portland, Or.	64.74	61.57	59.06	54.13	52.71	5.3%
St. Louis	65.82	60.97	58.15	53.20	51.46	6.3%
San Diego	66.07	61.98	59.46	54.50	53.07	5.6%
San Francisco	77.16	72.53	69.59	64.33	62.17	5.5%
Seattle	65.95	62.10	59.80	54.18	52.01	6.1%
Washington, D.C.	62.15	58.11	55.18	49.55	48.14	6.6%
Winston-Salem, NC	50.11	45.65	43.11	38.93	37.73	7.4%
Average	$ 64.03	$ 60.18	$ 57.51	$ 52.57	$ 50.78	6.0%

Source: Walker research, R.S. Means 2003 - 2007



The previous section of the report stressed the importance of understanding the project cost while the following section focuses on methods of generating parking revenue.

PARKING RATES

One of the most important considerations in evaluating and projecting future parking revenue for a parking garage is its average parking rates. These rates are formally defined as the average lease and transient rate per vehicle.

Parking rates are reflective of the market demand for parking spaces in a defined area. Walker recommends that the TPA consider adjusting monthly parking rates at the OTC Garage to reflect the future market conditions. At present, the parking rates are $70 for existing tenants. However, it is recommended that new tenants pay market rates, including any city-employees that have reserved parking in the garage. Current market rates are $86 for a general monthly contract and $95 to $130 for reserved monthly contract. Hourly parking rates at any new TPA parking facility should be in line with current parking rates at the TPA South Garage. The rate for hourly parking is $2.00 per ½ hour with a daily maximum rate of $8.00.

PRICING APPROACH

For instructive purposes, the definition of *Parking Pricing*[5] means that motorist pay directly for using parking facilities. Parking pricing may be implemented as a Transportation Demand Management (TDM) strategy (to reduce vehicle traffic in an area), as a parking management strategy (to reduce parking problems in a particular location), to recover parking facility costs, to generate revenue for other purposes (such as a local transportation program or downtown improvement district), or for a combination of these objectives. It is important to note that the cost to operate a public parking garage is either paid for directly by users or indirectly in the form of taxes. It is often perceived by municipalities that paying directly for parking is more equitable since the individuals who are using the public resources are charged and a fee is collected at the time of use. Regardless of the method selected to recoup the costs of providing parking, there is no such thing as free parking.

[5] Source: Victoria Transport Policy Institute, Transportation Demand Management Encyclopedia; Parking Pricing, Updated May 11, 2006

Parking pricing at public garages is impacted by the TPA's classification of public parking as a public utility or an enterprise. The TPA operates under the financial guidelines of an enterprise fund. This organizational structure has a direct impact on how the TPA operates its public parking system and views pricing strategies. To highlight the differences in approach to pricing when operating public parking as a public utility or enterprise fund, let us consider two scenarios:

- Public utility. It is common for municipalities that operate parking as a public utility to implement a cost approach when setting prices. The cost approach to pricing begins by asking what it costs to own, operate, and maintain parking facilities and what rate needs to be charged in order to cover costs. With this approach, the pricing does not consider the location or demand elasticity for parking in the surrounding area. Rather, the primary objective is to keep the parking rates as low as possible for the intended user groups without jeopardizing the solvency of the municipality's asset.
- Enterprise. Conversely, when a municipality operates its public parking as an enterprise, the prices are set according to the market conditions. Pricing for a parking enterprise tends to be at or near market levels and any net operating income after debt service is reinvested into new infrastructure or program improvements that benefit the community. This approach has benefited municipalities with a collective vision for community improvement projects and a common understanding that parking revenue may help bring the proposed community improvements to fruition.

Public parking is an economic good with fixed and variable costs that are often paid for with parking operating revenue. It is important that the policy makers who view parking as a public utility understand what is included in the parking operating costs along with any potential market forces that may influence costs. Walker's research shows that operating costs for parking vary dramatically due to geographical location, size of facility, staffing patterns, method of operation, and local legal requirements. Common expenses include the cost of utilities, supplies, daily maintenance, cashiering, management and accounting services, on-site security, structural maintenance, property taxes, and insurance. Types of insurance coverage include comprehensive liability, garage-keeper's legal liability, fire and extended coverage, workers' compensation, equipment coverage, money and security coverage (theft occurring on the premises), blanket honesty coverage (employee theft), and rent and business interruption coverage (structural damage resulting from natural phenomena). Annual operating expenses for structured parking facilities typically range from $200 to more than $800 per space. These figures exclude debt service and repair and replacement costs that may be associated with the public parking operation.

A market approach to pricing is implemented when a municipality views parking as an enterprise and reinvests the net operating income back into the parking operation or other public improvements. There are significant market factors that need to be evaluated prior to setting the rates. These factors include, but are not limited to property location, surrounding land uses, proximate competition, level of demand, policies on public transportation, and traffic mitigation goals. As with the TPA, market specific pricing is typically implemented when there are multiple public facilities, which results in a wide representation of prices being offered to the community. For example, a parking area located furthest from the core area of demand may warrant a parking price commensurate with its position in the downtown area, whereas a parking area positioned nearer to the core area may warrant a significantly higher price. Demand for parking at each location must be evaluated to determine if the appropriate prices are being charged.

One industry method of determining whether parking prices are appropriately set is to evaluate the peak daily utilization of a parking ramp or lot. If the parking spaces are more than 85% occupied, then parking rates may be set too low. The target equilibrium between supply and demand for most parking operations should be around 85%. Allowing the economic forces of supply and demand to influence the policy towards parking pricing is reflective of a parking operation that seeks to maximize the return on investment. In the case of public parking, some municipalities believe that it is a matter of responsible stewardship to generate a positive net operating income, which is then reinvested back into the community. This method of operation requires the municipality to actively monitor the parking prices at each of its locations in relation to the demand.

The table on the next page presents a matrix that may be used to quickly determine the monthly income required for a parking facility to reach its breakeven point. The breakeven point represents the point in which gross parking revenues are sufficient to cover annual operating expenses and amortized development costs. This analysis assumes that the development costs are amortized over a 20-year period at a six percent interest rate.

Table 53: Monthly Income Required to Breakeven

Project Development Costs Per Space	Annual Operating Expense Per Space									
	$150	$200	$250	$350	$450	$550	$650	$750	$850	$1,000
$1,000	22	26	30	38	47	55	63	72	80	92
$3,000	40	44	48	56	65	73	81	90	98	111
$5,000	58	62	66	75	83	91	100	108	116	129
$8,000	85	89	93	102	110	118	127	135	143	156
$9,000	94	98	103	111	119	128	136	144	153	165
$10,000	103	107	112	120	128	137	145	153	162	174
$11,000	112	117	121	129	137	146	154	162	171	183
$12,000	121	126	130	138	146	155	163	171	180	192
$13,000	131	135	139	147	156	164	172	181	189	201
$14,000	140	144	148	156	165	173	181	190	198	210
$15,000	149	153	157	165	174	182	190	199	207	220
$16,000	158	162	166	174	183	191	199	208	216	229
$17,000	167	171	175	184	192	200	209	217	225	238
$18,000	176	180	184	193	201	209	218	226	234	247
$19,000	185	189	193	202	210	218	227	235	243	256
$20,000	194	198	202	211	219	227	236	244	252	265
$30,000	285	289	293	302	310	318	327	335	343	356
$40,000	376	380	384	392	401	409	417	426	434	447

Source: Walker Parking Consultants, 2007

For example, if a the project development cost per space is $14,000 and the annual operating expense per space is $250, then $148 per month per space in operating revenue must be collected in order for the operation to breakeven. The table above demonstrates the difficulty of operating a solvent, stand-alone parking facility in a market that charges on average $80 per month with low levels of transient patronage.

ON-STREET PARKING

On-street parking directly competes with off-street parking garages on the basis of location and price. The on-street parking in downtown Tulsa offers patrons a premium location at a rate that is less than the cost of parking in one of the off-street parking structures. It is not uncommon for municipalities to price on-street parking according to perceived economic thresholds in the community, rather than on the basis of value. When parking is priced base on value, the most convenient parking located in closest proximity to demand is priced higher than the other parking alternatives.

At this time, the price to park at an on-street parking meter in the core downtown area of Tulsa is as follows:

30 Minute Meter	$0.10 each ½ hour
2 Hour Meter	$0.25 each ½ hour
10 Hour Meter	$0.05 each ½ hour

In comparison, the average hourly parking rate in a parking structure in downtown Tulsa is approximately $1.00 per hour. The hourly parking rate at the TPA South Garage and Main Park Plaza Garage is $2.00 per ½ hour due to their proximity to numerous demand generators. According to a value pricing approach, the on-street parking spaces should cost more per hour than off-street.

It is recommended that the TPA consider working with the City to establish a value based pricing strategy for on-street parking. A joint effort to calibrate the pricing strategies for on and off-street public parking can benefit both the City and the TPA.

OPERATING EXPENSES

The operating expenses include items such as labor costs, uniforms, snow and ice removal, floor sweeping and washing, routine maintenance, elevator maintenance, insurance, administrative expenses, security, supplies and tickets, and utilities. In projecting future operating expenses for the proposed parking facilities, Walker reviewed the TPA's historical operating statements for the parking garages from FY2005 through FY2007 to determine historical trends in operating expenses. In addition, operating expenses applied in this analysis are based on experience with other parking operations and our review of operating statements from over 250 parking facilities located throughout the United States.

STRUCTURAL MAINTENANCE

The TPA has allocated funds to pay for the ongoing repairs to the TPA North, South, and Civic Center parking garages. Walker recommends that the TPA continue to set-aside funds on a regular basis to cover structural maintenance costs. We suggest that a minimum of $75 per structured space be set-aside in a sinking fund. Contributions to this fund accumulate over time and are available to cover structural maintenance and structure repairs.

Parking structures commonly have different maintenance requirements compared to other commercial buildings: utility costs are less, HVAC and fire protection systems are minimal, tenant complaints are fewer, and repairs are usually structural in nature. Open parking structures are exposed to wide temperature swings, rain, snow, freezing and thawing, application of deicing chemicals and ultraviolet exposure. Building codes typically consider parking structures open based on the percentage of opening in the façade. This eliminates the need for HVAC and fire sprinkler systems.

Most deterioration can be attributed to poor quality concrete, chloride ion (salt) contamination, inadequate drainage, lack of provisions for thermal expansion and waterproofing system failure. Poor quality concrete lacks the density to resist chloride ion contamination or the microscopic air entrainment to resist the freezing and thawing cycle. Chloride ion contamination wreaks havoc when the ions contact embedded steel causing it to rust. The rusting steel expands in size causing spalling (potholes) and loses its ability to support the structure. Inadequate drainage causes water-ponding creating slipping hazards and accelerating water induced damage. Inadequate thermal expansion creates tearing, ripping and crushing at joints unable to accept the thermal expansion caused by with temperature movements. Failed waterproofing systems permit water to leak into joints, cracks and concrete itself rather then running off the structure. The leakage accelerates rusting and other water damage. In many cases, the damage is hidden in the early stages and does not become readily apparent until the damage is widespread.

Like all buildings, open parking structures require routine cleaning and maintenance. Routine cleaning typically includes washing down the floors, sweeping, inspecting the waterproofing system, replacing lights, regular upkeep on stairs, elevators, security equipment and access and revenue equipment. Sweeping the floors is of particular importance during and after the winter. This washing removes salts from the floor surface before they penetrate into the concrete.

Structural maintenance includes expansion and control joint maintenance, monitoring chloride ion intrusion, repairing waterproofing and repairing concrete deterioration. The responsibility for both cleaning and maintenance varies between owner and property management based on the negotiated agreements.

To reduce repair costs, the strategy is simple: keep water out of the structured system. Maintenance of the waterproofing system can help prevent leaks from affecting embedded steel and lighting systems, as well as deter water ponding. A moderate waterproofing maintenance program should occur every 7 to 10 years, since this is the life span of most waterproofing materials. A more sophisticated maintenance plan also includes monitoring chloride ion concentrations and upgrading waterproofing, if necessary, before deterioration begins.

A reasonable maintenance budget depends on a number of factors, including the type of repair, the level of deterioration, the square footage areas and the desired lifespan for these repairs. The range of typical maintenance and repair unit costs is a follows:

Range of Typical Repair and Maintenance Unit Costs

TYPE OF REPAIR	RANGE OF COST	LIFESPAN
Routing and Sealing Cracks	$1 to $1/LF	5 to 12 yrs.
Replacing Joint Sealant	$1 to $3/LF	5 to 12 yrs.
Replacing Expansion Joints	$10 to $100/LF	9 to 12 yrs.
Repairing Floor Spalls	$10 to $40/LF	3 to 5 yrs.
Repairing Ceiling Spalls	$40 to 100/LF	3 to 12 yrs.
Installing Supplementary Drains & Piping	$500 to $4,000/Each	20+ yrs.
Penetrating Sealer	$0.20 to $0.60 /SF	4 to 6 yrs.
Traffic Bearing Membrane	$2 to $5/SF	4 to 6 yrs.

Source: Walker Parking Consultants, 2007

The maintenance budget for a well maintained parking structure should be in the range of $30 to $90 per space per year ($0.10 to $0.30 per square foot per year) based on the location, age and structural system. Walker's recommended budget of $75 per space is generous during the initial 5 to 10 years of operation, but enables the owner to cover a significant portion of the routine maintenance costs that escalate in the latter years of a facilities useful life. Typical maintenance activities can be done during periods of low parking demand reducing the potential impact on revenue. If maintenance is neglected, repairs become necessary and will most likely impact revenues.

ANNUAL DEBT SERVICE PAYMENT

For the purposes of this analysis, Walker assumes that for both scenarios the project costs will be financed over a 20-year period, at an annual interest rate of 6.0 percent. This analysis assumes that $5,000,000 is allocated by the City of Tulsa to the TPA for the construction of new public parking structure. This assumption is applied to the project cost of each scenario. Changes to theses assumptions will alter the pro forma analysis.

UNDERLYING INFLATION ASSUMPTION

An integral part of this analysis is the assumption as to the future expectancy of general inflation, and the resulting impact on parking revenues and expenses. Expenses are generally projected to increase at an average rate of 3.0 percent per year based upon historic trends and general prognostications by Walker.

STABILIZED YEAR

The stabilized year is intended to reflect the average anticipated operating results of the public parking system over its economic life, given any or all of the applicable stages of build-up, plateau, and decline in the life cycle of the property. Thus, income and expense estimates from the stabilized year forward exclude from consideration any abnormal relationship between supply and demand, as well as any nonrecurring conditions that may result in unusual revenues or expenses. Projections assume the stabilized year to be the third year of the five-year projection period. There are numerous sources of parking demand that may impact the proposed parking facilities and each may come to fruition at different times. Walker assumes that the demand from special events will stabilize after the second year and the parking demand stemming from new or transferring office patrons will stabilize by year three of our five year projection period.

MARCH 7, 2008

FINANCIAL PRO FORMA STATEMENT OF OPERATION

The financial pro forma included in this report provides preliminary level financial analysis of the horizontal expansion of One Technology Center Garage (Site A). The purpose of this preliminary financial analysis is to evaluate the existing and projected parking revenue and expenses and prepare a 5-year financial pro forma statement of operation. The results of this analysis identify whether or not the potential incremental gain in parking revenue is sufficient to pay the annual debt service payment.

The horizontal expansion of One Technology Center Garage is presented as one operating unit with the existing supply since the expansion would share vehicular access ramps, elevators, exit/entry lanes, and revenue and access control equipment.

In Table 54 and Table 55, the preliminary financial projections are presented for the One Technology Center Garage with expansion.

Table 54: Site A Horizontal Expansion of OTC Garage – Potential Parking Revenue

Category	Term	Annual	Cars/Day	% of Total	Rate	Revenue
Monthly						
[1] Level 3/Deloitte	12	7,716	643	50.1%	$ 70.00	$ 540,000
[2] Williams Company	12	3,600	300	23.4%	$ 70.00	$ 252,000
[2] City Employee-Reserved	12	1,200	100	7.8%	$ 95.00	$ 114,000
[3] Other OTC Tenants	12	2,880	240	18.7%	$ 86.00	$ 248,000
Total Monthly		15,396	1,283	100.0%		**$ 1,154,000**
[4] **Transient**						
< 1 hour	250	22,500	90	30.0%	$ 1.00	$ 22,500
< 2 hours	250	30,000	120	40.0%	$ 2.00	$ 60,000
< 3 hours	250	11,250	45	15.0%	$ 4.00	$ 45,000
< 4 hours	250	7,500	30	10.0%	$ 6.00	$ 45,000
< 5 hours	250	3,750	15	5.0%	$ 8.00	$ 30,000
< 6 hours		0	0	0.0%	$ 8.00	$ -
< 7 hours		0	0	0.0%	$ 8.00	$ -
< 8 hours		0	0	0.0%	$ 8.00	$ -
< 9 hours		0	0	0.0%	$ 8.00	$ -
< 10 hours		0	0	0.0%	$ 8.00	$ -
> 10 to 24 hours		0	0	0.0%	$ 8.00	$ -
Total Transient			300	100.0%		**$ 202,500**

Special Event	Est. Event Days/Yr	Vehicle Demand	Capture Rate	OTC Pkg. Demand	Rate	Revenue
[5] BOK Center	214	364,683	1.42%	5,192	$ 4.00	$ 21,000
[6] PAC	-	-	0%	0	$ 4.00	$ -
[7] Downtown Festivals	5	42,000	18%	7,684	$ 4.00	$ 31,000
Total Special Event				12,876		**$ 52,000**

Total - Potential Gross Revenue	**$ 1,408,500**

Notes:

[1] Assume current OTC tenant parking demand remains constant with 2007YTD trend.
Assume Level 3 and Deloitte monthly parking rate is $70 per month.
Assume Level 3 and Deloitte maximize their allotted parking supply in the OTC Garage.
[2] Assume Williams Company maximize their allotted parking supply in the OTC Garage.
[2] Assume 100 city employees are assigned reserved parking spaces in OTC Garage and pay market rate for premium parking.
[3] Assume available office space is occupied and tenants are provided at minimum 100 monthly permits at $86/month.
[4] Assume on average 250 spaces remain available for visitors on a daily basis.
Assume 250 spaces turn 1.2 time per day, 250 days per year.
[5] The distant proximity of this site to the BOK Center and available parking supply closer to the event center limit the revenue potential.
[6] PAC event demand presently does not exceed parking supply in the PAC Lot and TPA South Garage.
[7] Major downtown festivals include Mayfest, PSO Christmas Parade of Lights, and Oklahoma Bluesfest.

Table 55: Site A – 5-Yr Financial Pro Forma Statement of Operation

		2008 [1]		2009 [2]		2010 [3]		2011		2012
OPERATING REVENUE										
						Stabilized Year				
Monthly	$	906,000	$	1,154,000	$	1,189,000	$	1,189,000	$	1,225,000
Transient - Daily		203,000		203,000		209,000		209,000		215,000
Special Event		31,000		52,000		52,000		52,000		52,000
Potential Gross Revenue (PGR)	$	1,140,000	$	1,409,000	$	1,450,000	$	1,450,000	$	1,492,000
Less Collection & Vacancy Loss (1% of PGR))		(11,000)		(14,000)		(15,000)		(15,000)		(15,000)
Less Credit Card (CC) Processing Fees (% of sales via CC x CC rate x PGR)		(3,000)		(3,000)		(3,000)		(3,000)		(3,000)
Effective Gross Revenue (EGR)	$	1,126,000	$	1,392,000	$	1,432,000	$	1,432,000	$	1,474,000
Total - Effective Gross Revenue / Space	$	693	$	857	$	881	$	881	$	907
OPERATING EXPENSE										
Labor - Taxes & Benefits	$	98,000	$	101,000	$	104,000	$	107,000	$	110,000
Management Fee		18,000		19,000		20,000		21,000		22,000
Utilities - Electric & Telephone		72,000		74,000		76,000		78,000		80,000
Insurance - GL/GKLL		33,000		34,000		35,000		36,000		37,000
Supplies		13,000		14,000		15,000		16,000		17,000
Routine Maintenance		49,000		50,000		52,000		54,000		56,000
Contracted Services		18,000		19,000		20,000		21,000		22,000
Sales Tax - Gross Receipts		86,000		106,000		109,000		109,000		112,000
General Expense		1,000		1,000		1,000		1,000		1,000
Total Operating Expense	$	388,000	$	418,000	$	432,000	$	443,000	$	457,000
Estimated Net Operating Income before Reserve Fund	**$**	**738,000**	**$**	**974,000**	**$**	**1,000,000**	**$**	**989,000**	**$**	**1,017,000**
Structural Repairs & Replacement (reserve fund)		122,000		122,000		122,000		122,000		122,000
Estimated Net Operating Income	**$**	**616,000**	**$**	**852,000**	**$**	**878,000**	**$**	**867,000**	**$**	**895,000**
Estimated Debt Service Payment ($5M contribution) [4]	$	399,000	$	399,000	$	399,000	$	399,000	$	399,000
Estimated Debt Service Coverage Ratio		1.54		2.14		2.20		2.17		2.24
Estimated Debt Service Payment ($2M contribution) [5]	$	661,000	$	661,000	$	661,000	$	661,000	$	661,000
Estimated Debt Service Coverage Ratio		0.93		1.29		1.33		1.31		1.35

[1] Assume 0% occupancy of excess office space in year 2008 and no parking lease revenue from this user group.
Assume BOK Center opens in fall of 2008 and no material demand is generated by the BOK Center that impacts the OTC Garage.
Assume capture rate on OTC transient demand is 20 percent (300 vehicles/1,521 = 20% rounded)

[2] Assume 100% occupancy of excess office space resulting in 240 additional monthly contracts at $86/month.
Assume 506 additional monthly parking spaces are utilized by Level 3, Deloitte and Willams at $70/month.
Assume 2009 is the first complete year of BOK Center activity.

[3] Assume first full year of stabilized demand.

[4] Assume $5 million contribution to project cost ($9,582,000 - $5,000,000 = Principal of $4,582,000)

[5] Assume $2 million contribution to project cost ($9,582,000 - $2,000,000 = Principal of $7,582,000)
Monthly lease and daily parking rates are increased by 3% in years 2010 and 2012.
Operating Expenses are increased by 3% annually, where appropriate, beginning in year 2009
Assume property tax is excluded from the analysis due to municipal ownership. Assume property operates in compliance with IRS Private Use requirements.
All figures are rounded.

BASE ASSUMPTIONS

1. Parking demand for One Technology Center Garage would likely come from the 437 existing parking contracts with tenants at the One Technology Center, plus relocated City employees, transient patrons, and the assumption that Level 3, Deloitte and Williams will exercise their contractual right to lease a total of 506± spaces.

2. Transient parking activity at the One Technology Center Garage is made up of visitors patronizing City Hall services. A significant portion of the projected transient parking demand will be served by the PAC Lot (150 spaces) and the available on-street parking located within a one-block radius of the One Technology Center. This analysis conservatively assumes approximately 20 percent of the total projected transient demand will utilize the One Technology Center Garage.

3. It is assumed that the PAC Lot will permit the City to use 150 parking spaces for transient patrons for the five year projection period. It is likely that within the next ten years the PAC Lot will become the site of the PAC expansion. The One Technology Center Garage could experience an increase in demand if the PAC Lot is displaced. This is not reflected in the preliminary financial model.

4. The parking lots located within two blocks of the One Technology Center that currently do not charge for parking or charge a nominal rate, will adjust to the new level of market demand for parking and offer competitive rates. This analysis assumes there will be no free or unregulated parking offered within a two block radius of the One Technology Center Garage.

5. This analysis assumes two debt service calculation scenarios: 1) the TPA will allocate $5 million towards the site acquisition and construction costs, 2) TPA will allocate $2 million towards the site acquisition and construction costs. If either assumption changes, the projected debt service payment will differ, resulting in a change in projected debt coverage ratio.

6. Horizontal expansion of the One Technology Center Garage will provide 613 structured parking spaces, one level at grade and five supported levels. The hours of operation assumed for this analysis are 6:00 AM to 12:00 AM. M-F, weekend periods staffed as the market requires. Labor would include two attendants on staff during peak loading and unloading periods, one part-time custodian, one part-time off-site manager, and one part-time bookkeeper.

FUTURE FUNDING OPPORTUNITIES

The purpose of the TPA is to promote acquisition, construction and operation of parking facilities within the City of Tulsa. The TPA has the financial capacity to issue revenue bonds to provide funds for the acquisition and construction of publicly operated parking facilities.

The TPA has operated the pubic parking system in downtown Tulsa with a clear understanding and vision for the future. Funds have been budgeted and set-aside in reserve to pay for new parking facilities that will support short-term downtown revitalization efforts. The challenge faced by the TPA is to maintain fiscal solvency while keeping up with increasing demands for more parking in the future. The new parking projects will be supported, in large part, by the parking facility user fees. This will require regularly scheduled rate increases to account for inflationary cost adjustments. To mitigate the direct reliance on the parking patron to absorb rising costs to construct and operate public parking, Walker discusses alternatives for generating additional revenue that include the application of a fee-in-lieu program and/or a downtown parking tax.

ENVIRONMENTAL AND INDIRECT COSTS

Prior to examining a fee-in-lieu program, it is important to understand on a cursory level the environmental and direct costs associated with paved parking. Paving land for parking imposes environmental costs, including loss of greenspace, increased impervious surface and related stormwater management costs, and aesthetic degradation. Generous parking requirements and low parking prices tend to discourage infill development, encourage sprawl (low density, dispersed development patterns). As a result, it tends to increase per capita vehicle ownership and use and reduces the viability of other modes such as walking, cycling and public transit.

As an alternate approach, some cities have gone as far as prohibiting the development of new off-street parking anywhere in the downtown to help achieve the goals of New Urbanism and Smart Growth planning goals, and then collect fees-in-lieu to build municipal parking, usually on the periphery. While prohibiting all off-street parking in a CBD may not be the choice of every community, prohibiting new surface parking lots can improve the "pedestrian ambience" of the downtown.

FEE-IN-LIEU PROGRAM

In order for a fee-in-lieu parking program to be implemented and effective there must be a minimum parking requirement within the city code. Many cities have long feared that requiring parking for each building in the CBD will "destroy the fabric" of the downtown. In other cases, cities have found that requiring parking for each building seriously constrains the revitalization of downtowns and the adaptive reuse of nearby industrial buildings that were not required to provide parking when first built, but now are under-utilized or vacant. Therefore, many cities have waived minimum parking requirements in the CBD. However, if parking requirements are not applied to the CBD in some manner, the principles of shared parking and fees-in-lieu cannot be applied within the downtown. At present, the City of Tulsa parking code for land uses in the CBD do not require a minimum parking supply.

The current parking code, Title 42, Chapter 13, Section 1301, Item F states that the capacity of an off-street parking area shall be the number of parking spaces, having minimum required dimensions for both the parking spaces and maneuvering areas, which are positioned so that each parking space can be entered without passing through another parking space; provided that parking spaces accessory to a Use Unit 6 or 7 dwelling may be accessed through another parking space when the spaces are accessory to the same dwelling.

A number of cities have tried to find a means to advance the concept of shared parking by motivating developers or property owners who create the need for additional parking to contribute some or all of the cost of developing additional parking in municipal facilities. The approach provides the developer with an opportunity to contribute a predetermined amount for each required parking space not constructed on site. Funds contributed to the in-lieu account are used by the city to provide an appropriate number of spaces in municipal parking facilities. Such a fund must be sufficient to cost-effectively develop adequate parking in reasonable proximity and in a timely manner to each new development. The city must charge a sufficient fee-in-lieu to cover the cost of land and construction, even when it is not immediately turning the fee into parking spaces.

In lieu fees allow developers to pay into a fund for off-site municipal parking facilities instead of providing their own on-site parking. Below are examples of such programs.

<u>Existing Fee-in-Lieu Programs</u>

Town of Davie, Florida
Orlando, Florida
Coconut Grove, Florida
City of Bend, Oregon
Corvallis, Oregon
Town of Jackson, Wyoming
Berkley, California
Davis, California
Laguna Beach, California
Lake Forest, Illinois
Wheaton, Illinois
Sioux Falls, South Dakota

Miami's Coconut Grove, Florida (an upscale neighborhood of Miami)

Coconut Grove adopted a fee-in-lieu program in 1993 and has experienced considerable success. The fee is $10,000 per stall, or payments of $50/month/stall. Developers have opted out of 938 spaces, generating approximately $3 million in revenues. The funds were used to develop a 416-space garage with ground floor retail, study the feasibility of a downtown circulator, landscaping, and installation of traffic control devices to improve parking and pedestrian access. Business licenses can be revoked due to non-payment.

Lake Forest, Illinois

Lake Forest has had a fee-in-lieu policy for about 15 years. All funds generated must pay for parking acquisition or development. The impetus was a desire to preserve the historic character of the downtown. The fee was recently increased from $14,000 to $22,000 per stall. The city considers the program effective, and developers use the option frequently.

Jackson, Wyoming

Jackson Wyoming adopted a fee-in-lieu policy in 1994, in conjunction with a new Comprehensive Plan and the adoption of parking minimums. The fee-in-lieu option was in response to concerns that the parking minimums would hinder economic development. The per-stall fee ranges from $1,000 (up to four stalls) to $10,000 (more than 41 stalls), depending on the number of stalls being opted out. The City does not have a specific obligation regarding timeline or proximity of new parking, but the funds raised are restricted to construction of parking only. The policy is used frequently.

Bend, Oregon

Bend's policy was adopted in 1992. It was initiated due to concerns about constrained land for development. Developers have the option of building, leasing off-site, or paying the fee. The option has been used frequently but the fee was set very low ($510 per stall). There are no specific obligations regarding timeline or proximity, but the fees must go into the parking fund to provide parking facilities in or adjacent to the CBD.

TAX PARKING FACILITIES OR THEIR USE

If governments must tax something, it may be appropriate to tax parking as a way to control demand and correct existing distortions that under-price parking. Taxes can be applied to parking spaces, parking subsidies and parking rental transactions. For example, a municipality can charge a special property tax of $5 annually per parking space owned by businesses, $10 annually per space provided free to employees, or a special sales tax of 20% on commercial parking transactions. For example, the city of San Francisco charges a 25% tax on commercial parking transactions. Also, there are some communities that elect to collect a flat $1.00 fee per parking transaction that is applied to a public parking improvement fund. Municipalities could also charge a tax on curbcuts comparable to potential revenue foregone had the same curb area been devoted to priced on-street parking. This would encourage property owners to minimize the number and width of curb cuts, through access management and consolidation of driveways and parking facilities, which helps improve traffic flow and create more pedestrian friendly streetscapes.

Parking tax reform can also be used to correct existing policies that undertax parking. For example, land devoted to parking is sometimes assessed at a lower rate than if the same land were used for buildings, on the assumption that rents are paid on buildings, while parking is an ancillary use. Taxing land devoted to parking at the same rate as building land gives businesses an incentive to reduce parking supply.

PRE-TAX PARKING REIMBURSEMENT ACCOUNT PROGRAM

It is important that the TPA actively market to downtown tenants the opportunities that exist to maximize tax incentives for employees who pay to park while at work in downtown. A tax program that can be a benefit to downtown employees is regulated by Section 132 of the Internal Revenue Code (IRC) - Qualified Transportation Fringe Benefits. The IRC defines "qualified parking" as:

Parking on or near the employer's business premise or at a location from which the employee commutes to work by carpool, commuter highway vehicle, mass transit facilities, transportation provided by any person in the business of transporting persons for compensation or hire, or by any other means.

For the 2007 tax year, you can deduct your actual cost of parking, up to $215/month. Your funds are deposited in a special reimbursement account. To receive payments from your account, you must submit a reimbursement claim along with the required parking receipts.

Walker is aware of employers in the study area that currently offer public transit vouchers and pre-tax parking reimbursement account program. It is recommended that the TPA educate and encourage employers to participate in the program in an effort to mitigate the impact parking fees may have on downtown employees.

LIMITING CONDITIONS

This report is subject to the following limiting conditions:

1. This report is based on assumptions outside the control of Walker Parking Consultants/Engineers, Inc. ("Walker") and/or our client. Therefore, Walker cannot guarantee the results.
2. The results and conclusions presented in this report may be dependent on future assumptions regarding the local, national, or international economy. These assumptions and resultant conclusions may be invalid in the event of war, terrorism, economic recession, rationing, or other events that may cause a significant change in economic conditions.
3. Walker assumes no responsibility for any events or circumstances that take place or change subsequent to the date of our field inspections.
4. Sketches, photographs, maps and other exhibits included herein may not be of engineering quality or to a consistent scale, and should not be relied upon as such.
5. All information, estimates, and opinions obtained from parties not employed by Walker, are assumed to be accurate. We assume no liability resulting from information presented by the client or client's representatives, or received from third-party sources.
6. All mortgages, liens, encumbrances, leases, and servitudes have been disregarded unless specified otherwise. Unless noted, we assume that there are no encroachments, zoning violations, or building violations encumbering the subject properties.
7. Walker is not qualified to detect hazardous substances, has not considered such, and therefore urges the client to retain an expert in this field, if relevant to this study.
8. This report is to be used in whole and not in part. None of the contents of this report may be reproduced or disseminated in any form for external use by anyone other than our client without our written permission.
9. The projections presented in the analysis assume responsible ownership and competent management. Any departure from this assumption may have a negative impact on the conclusions.
10. Computer models that use and generate precise numbers generate some of the figures and conclusions presented in this report. The use of seemingly exact numbers is not intended to suggest a level of accuracy that may not exist. A reasonable margin of error may be assumed regarding most numerical conclusions. Conversely, some numbers are rounded and as a result some conclusions may be subject to small rounding errors.