

# Dallas Arboretum

## Economic Impact Study 2011

---

By:

Margaret Bermingham  
Jonathan DeLord  
Daryl Rush  
Supreeth Kini

Cox School of Business  
Southern Methodist University

Under the Supervision of:

Richard A. Briesch, PhD.  
Marilyn and Leo Corrigan Endowed Professor of Marketing  
Cox School of Business  
Southern Methodist University

Date: March 19, 2012

## Executive Summary

### 1.1. Introduction

The Dallas Arboretum (Arboretum) is one of the premier cultural and recreational attractions in the North Texas region, promoting enjoyment through its exhibits and special events, conveying knowledge through its educational programs, conserving nature through its conservation efforts and serving community through various programs. The Arboretum is known for its environmental and educational impact, yet its role as a contributor to the North Texas economy is not as well known. The purpose of this report is to identify: 1) the current economic impact of the Arboretum; 2) how the growth of the Arboretum will affect the economic impact; and 3) how the resources will be affected as a result of the projected growth of the Arboretum.

Most people familiar with the Dallas Arboretum appreciate the intrinsic benefits of its service – its beauty, how it inspires, educates, and connects us. When it comes time to make funding choices, however, elected officials, business leaders, and community citizens need to have strong and credible data that demonstrate the economic benefits of a vibrant nonprofit institution.

### 1.2. Key Findings

- **Direct, indirect, and induced spending associated with operations by the Arboretum support significant economic activity within the North Texas region.**
  - The combined effects of operations and visitor spending associated with the Arboretum generated more than \$100 million of economic benefits to the North Texas region in 2011.
- **Construction and expansion activities by the Arboretum have generated additional business sales, earnings and employment that will continue to impact the local economy as future projects are undertaken.**
  - Specifically, the expansion of the Children’s Garden as a one-time construction cost will ultimately provide \$78.6 million in economic impact to the North Texas region.
- **Spending by non-local visitors to the Arboretum generates economic activity throughout the Dallas region.**
  - Induced spending on local restaurants, lodging, retail and other activities by non-local Arboretum visitors represents \$3.25 million flowing into the Dallas region.
- **Growth of the Arboretum has not hurt the real estate prices in surrounding neighborhoods and has benefited the local real estate market as compared to the overall Dallas real estate market.**
  - Analyses of historic real estate prices in the surrounding neighborhoods reveal a strong positive correlation between attendance at the Arboretum and housing prices in the surrounding zip codes as compared with overall Dallas real estate prices.

- **The Arboretum can expect an annual attendance increase between 50% -125% in 2012 and 2013, which will dramatically affect the current parking capacity.**
  - Conservatively, if the Arboretum experiences a 50% increase in attendance, there is a shortage of 37,044 spaces which equates to 89,628 visitors lost, and \$13,232,642 of economic impact lost. To accommodate for a conservative 50% increase in attendance, an additional 327 parking spots are needed.
  
- **Based on conservative anticipated attendance growth for the upcoming Chihuly exhibit, we expect the Arboretum to have an economic impact of \$145.8 million to \$176.0 million in 2012.**
  
- **The Arboretum provides an enhanced quality of life to the Dallas community as evidenced by an equivalent value of \$1.2 million of volunteerism time and enhanced supplementary earth science education to approximately 100,000 students annually.**

## **2. Purpose & Scope**

Not only is the Dallas Arboretum an internationally renowned environmental and educational institution, it is also a vital part of the North Texas economy. As the one of MSN's Top Ten Places to Visit in the Country in the spring and consistently ranked as one of the top botanical gardens in the United States, the cultural importance of the Dallas Arboretum is generally well understood, but its regional economic significance is less well known. The purpose of this study is to identify the economic impacts, both direct and indirect, that the Dallas Arboretum has on the economy of the Dallas metropolitan area as well as assess how the growth of the institution will impact the surrounding community.

## **3. Economic Analysis Methods & Assumptions**

### **3.1. Direct Impact**

Direct impact includes the total earnings generated from the Arboretum operations in 2011. This includes contributed and earned income. No multipliers are applied to this direct impact, otherwise known as the Arboretum's output.

### **3.2. Indirect Impact**

Vendors in the North Texas region receiving contracts for materials and supplies used in the delivery of the Arboretum's programs and services employ individuals to fill these orders and spend a portion of their revenues to purchase goods and services from suppliers. In this manner, the initial spending by the Arboretum leads to second, third and additional transactions. In order to calculate the economic impact from indirect organizational spending, a multiplier is applied to the total operating expenses. The economic multipliers applicable to expenditures made by the Arboretum were determined by the Regional Input-Output Modeling System (RIMS II) specific to the local region as defined by Collin, Dallas, Denton, Ellis, Kaufman, Rockwall, and Tarrant counties. This input-output model was developed by the U.S. Department of Commerce's Bureau of Economic Analysis (1997 edition) and is widely used in measuring indirect effects. A multiplier of 1.3777 was assessed for all operational expenditures based on the "Performing arts, spectator sports, museums, zoos, and parks" industry within the local region. A multiplier of 1.4552 was assessed for all capital expenditures relating to the construction project for the Rory Meyers Children's Adventure Garden (Children's Garden), based on the same RIMS II modeling system for the construction industry. This means that for every \$1 expended on the construction of the new Children's Garden, another \$0.4552 is being generated in the secondary and tertiary sectors of the local economy, sometimes informally referred to as the "ripple effect."

### **3.3. Induced Impact**

Persons employed at the Arboretum spend a portion of their salaries on goods and services produced in the region, providing opportunities to businesses in the North Texas area for the production of those goods and services. RIMS II calculates employment

multipliers for various industry segments in much the same way it calculates economic multipliers, such that full-time, part-time, and contract wages are assessed a multiplier of 1.9303.

### **3.4. Induced Audience Spending**

Induced audience spending occurs when attendees of the Arboretum purchase meals, refreshments, transportation, lodging, and other related goods and services over and above the cost of admission. In order to calculate induced audience spending we have relied on the methodology employed by Deloitte Consulting and the Business Council for the Art's 2010 Economic Impact Study of Arts and Cultural Organizations in North Texas.<sup>1</sup> This study utilized primary research from consulting firm Arts Market, Inc. for the Cultural Arts Council of Houston, which concluded that ancillary spending of audiences amounted to \$14 per person among Houston residents and a great deal more for non-Houston residents. This figure was considered extremely conservative and also outdated, so it was adjusted for Consumer Price Index (CPI) increases for Dallas-Fort Worth as compiled by the US Bureau of Labor Statistics. The resulting ancillary spending per person for cultural activities in the Dallas area was calculated to be \$22.94, which we assumed for the purpose of this study. This amount is unadjusted by the RIMS II multiplier.

### **3.5. Social Impact**

In addition to the normal economic factors included above, we also calculated what some may consider being soft economic benefits of the Arboretum or social impact of the Arboretum on the quality of life for the local community. Specifically, the value of volunteerism to the community, the value of the Arboretum in maintaining real estate prices in the neighboring zip codes, and the value of Earth Science Education provided to local schools.

## **4. Economic Impact for Fiscal Year 2011**

As shown in Table 1, the total estimated economic impact of the Dallas Arboretum is approximately than \$100.8 million. Of this amount, approximately \$98.2 million is direct, indirect and induced economic impact, and approximately \$2.6 million is in quality of life factors (although the effect on real-estate prices is not included).

Of the \$98.2 million in economic impact, approximately \$16 million is attributed to Direct Impact, \$56.4 million is attributed to Indirect Impact, \$11 million is attributed to Induced Impact, and \$14.8 million is attributed to Induced Visitor Spending.

Of the \$2.6 million in quality of life factors, approximately \$1.2 million is attributed to volunteering opportunities, and approximately \$1.4 million is attributed to educational benefits.

---

<sup>1</sup> <http://www.ntbca.org/assets/BCA-2010-Economic-Impact-Study.pdf>

**Table 1. 2011 Dallas Arboretum Economic Impact**

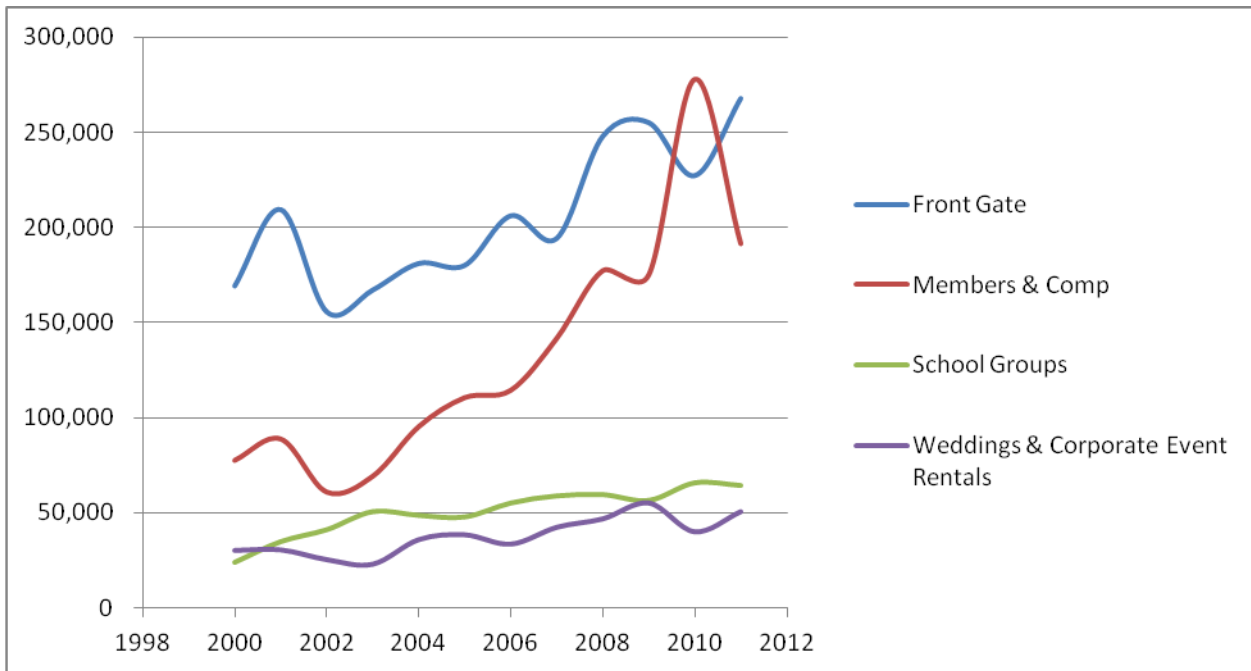
	Direct Impact	\$15,914,902
	Indirect Impact	\$56,411,309
Direct Economic	Construction	\$39,815,287
	Other	\$16,596,023
	Induced Impact	\$11,042,978
	Induced Visitor Impact	\$14,846,708
	Sub-total	\$98,215,897
Quality of Life	Volunteers	\$1,249,560
	Education	\$1,399,625
	Sub-total	\$2,649,185
	Grand Total	\$100,865,082

If we discount the construction items (which have a separate budget for 2012), the economic impact per visitor is estimated to be \$92.27. We use this number below to calculate the estimated impact for 2012, as well as the potential losses due to a lack of resources.

#### 4.1. Attendance

The Dallas Arboretum attracted a total of 661,618 individual visitors in 2011.<sup>2</sup> This attendance figure includes admissions from memberships, single-admission tickets, and school groups. Total attendance in past 5 year has grown on average 10.28% year-over-year (2007 - 2011). Figure 1 provides the yearly attendance figures for the last 10 years.

**Figure 1. Attendance Growth (2001 – 2011)**

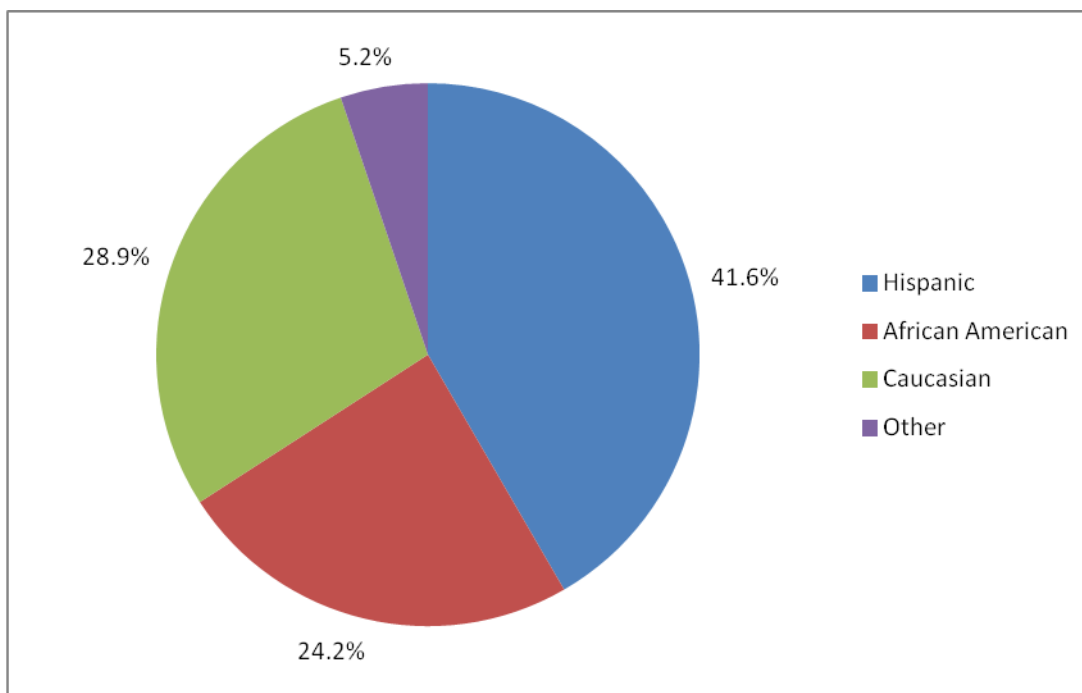


<sup>2</sup> Dallas Arboretum internal documents, 2011 Attendance Report

As points of local comparison, in 2011, the Museum of Nature & Science saw approximately 416,000, the Dallas Museum of Art saw approximately 700,000 visitors and the Dallas Zoo saw approximately 790,000 visitors. With attendance of 661,618, the Arboretum is consistent with other major regional non-profit attractions in the area.<sup>3</sup>

Approximately 15% of all visitors, or 100,773, participated in Educational Programs.<sup>4</sup> Figure 2 provides a breakdown of the ethnic diversity in children’s educational programs. It is clear that the Arboretum is an inclusive environment and its participants are a reflection of the diversity seen in the Dallas community at large. Further, the minority community is a key beneficiary/user of the educational programs offered by the Arboretum.

**Figure 2. Diversity in Children’s Educational Program Attendance**



#### 4.2. Cultural Tourism

Approximately 17% (1 in 6) visitors travel more than 40 miles to visit the Dallas Arboretum.<sup>5</sup> The ongoing operations of the Arboretum that attract visitors from resident and visitor markets will form a stream of economic benefits to North Texas. Specifically, the “Chihuly at the Dallas Arboretum,” featuring the world-renowned dramatic glass sculptures will run from May 5 - November 5, 2012 anticipates attracting new visitors who would otherwise not visit Dallas. The Arboretum, particularly with this blockbuster exhibit,

<sup>3</sup> Dallas Arboretum internal documents, 2011 Attendance Report

<sup>4</sup> Dallas Arboretum internal documents, 2011 year end attendance report

<sup>5</sup> Dallas Arboretum internal documents, 2010 Report Final

will be of a scale, stature, and length of stay sufficient to be a primary trip purpose or principal recreational activity in conjunction with Dallas tourism. In this regard, the Arboretum acts as a facilitator of local economic development by providing a gathering place for non-local visitors, thereby supporting business activity proximate to the facility. With 17% of visitors attending from non-local zip codes, a large portion of the visitor spending associated with a visit to the facility will be net new to the local and regional economies. New net spending as a result of cultural tourism may also be derived from grants and contributions awarded to the Arboretum that would otherwise go to areas outside the local economy.

### **4.3. Quality of Life**

#### **4.3.1. Volunteerism**

Volunteers for the Dallas Arboretum reinforce principles of good citizenship and enhance the quality of life in the Dallas community. In 2011, volunteers donated over 58,500 hours to mission fulfillment at the Dallas Arboretum. This group comprised of 467 individual volunteers, 7 civic groups, 24 corporate groups, and 28 school groups. In the past five years the number of annual volunteer participants has grown over 100%.<sup>6</sup>

Volunteer hours and value are not directly reflected in the estimates of employment economic impact figures, but included solely to further highlight citizen support. However, according to the estimated dollar value of volunteer time in Texas, their 2011 value would represent an additional \$1,249,560 of economic impact.<sup>7</sup>

#### **4.3.2. Real Estate**

Lakewood, Lake Highland and White Rock Lake, the area hosting the Arboretum's campus, are choice neighborhoods for families. The area is also a thriving location for retailers, restaurants, and local small businesses. Importantly, while overall housing prices in Dallas/the majority of Dallas neighborhoods declined due to the financial crisis, this area proved resilient. As shown in Figure 4, the housing prices in the arboretum area have increased by 3.5% from 2007 to 2011; whereas the average house price in the Dallas Area has decreased by 3.3% over the same time frame, for a net difference of 6.8%<sup>8</sup>. That is, had the house prices in the Arboretum area performed similarly to the prices in the Dallas Market overall, the houses would be approximately 6% lower than their current market value – a difference of approximately \$10,500 for the average homeowner.

We note that there is a decrease in the final year (2011 vs. 2010), but believe that this decrease could be due to lower transaction volume in 2011 or a statistical anomaly in

---

<sup>6</sup> Dallas Arboretum internal documents, Volunteer Report 2011

<sup>7</sup> [http://www.independentsector.org/volunteer\\_time](http://www.independentsector.org/volunteer_time)

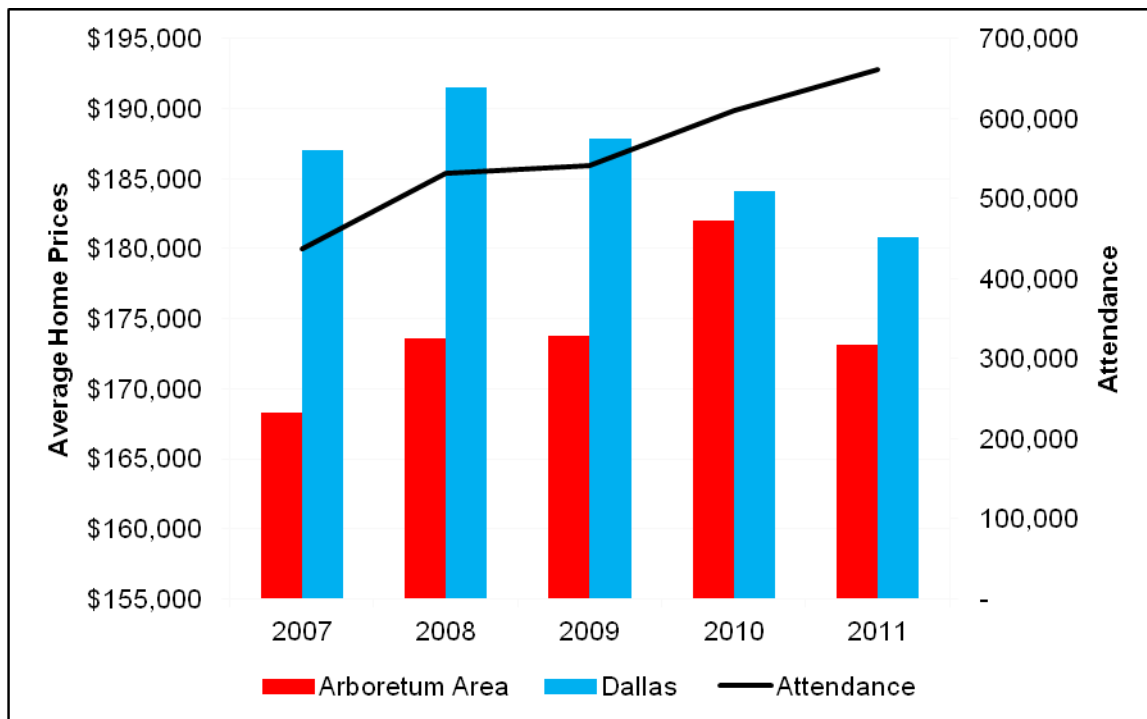
<sup>8</sup> MLS Database, 2007 to 2011



2010. This lower volume in 2011 could have been due to increased difficulty that consumers are have for qualifying for loans, especially for higher priced homes.<sup>9</sup>

We ran a regression of Arboretum attendance on the ration of the Arboretum Home Prices to the Average Dallas Prices (to control for local market conditions). We found a significant (at a 90% confidence interval, due to five observations) and positive relationship between Arboretum attendance and this ration. This result indicates that the presence of the Arboretum contributes to making these areas attractive places to live and is a strong positive factor for potential buyers, helping to strengthen the housing market even in down markets.

**Figure 3. Attendance Growth vs. Housing Prices (2007 – 2011)**



#### 4.4. Science Education

The Dallas Arboretum currently serves neighboring schools in the community and across the metroplex. Admission is on a sliding scale basis so that many different school districts can attend and not just ones with a surplus in the school budget. Even though this method makes things equal and gives many children the opportunity to attend the Arboretum, Texas only has 45% proficiency in Science across all students in 3<sup>rd</sup> -11<sup>th</sup> grades.<sup>10</sup>

<sup>9</sup> See, e.g., <http://www.nytimes.com/2011/05/11/business/11housing.html?pagewanted=all> and/or <http://www.mesirowfinancial.com/blog/economics/2011/08/18/dswonk/home-sales-fall-on-mortgage-difficulties/>.

<sup>10</sup> [http://www.tea.state.tx.us/student\\_assessment/taks/rpt/perf/](http://www.tea.state.tx.us/student_assessment/taks/rpt/perf/).

The arboretum provides a unique opportunity for the local school districts to engage their students in Earth Science and potentially increase the test scores. In an online article, Nabors, et al (2009)<sup>11</sup> state:

*“Field trips in the formative years are one of the most important things teachers can provide for their students. As we all know, children learn by doing. They remember what they have personally experienced. In addition, concept development is optimized through active, explorative experiences. Field trips are a type of experiential learning that gets children away from the traditional classroom setting and into a new mode of learning.”*

They go on to argue that field trips not only provide deeper understanding within a subject area, but they also 1) expand and enrich the curriculum, 2) strengthen the observational skills of the students, and 3) can increase the student’s awareness and appreciation of their community.

While these are considered soft benefits, we calculate the economic value of the benefits as what it would cost to bring an instructor into class to teach the students about Earth Science for one day for all of the students. Given that the approximate average salary for teachers in the Dallas school district is \$55,000,<sup>12</sup> and using an average class size of 22:1,<sup>13</sup> and 180 school days per year, we calculate a benefit of \$13.89 per student. We believe this to be conservative, as it does not include benefits or other costs.

## 5. Growth of the Arboretum

In this section, we analyze the growth of the Arboretum in this next year to determine the economic impact as well to demonstrate the potential for lost economic activity if the arboretum does not get additional resources.

### 5.1. One-Time Economic Impact Due to Construction

In much the same manner as direct impacts, indirect impacts, and induced impacts, the construction of a major expansion project has an impact on the local, state and regional economies. Activities such as construction increase employment for those working directly on the construction project as well as for those firms that supply construction materials. These people, in turn, spend a portion of their income in the local economy. This cycle eventually leads to third, fourth and additional transactions as the initial revenue streams are disbursed throughout the local economy.

To project the total economic impact due to the construction of the Rory Meyers Children’s Adventure Garden a gross multiplier of 1.4552 has been applied, as described in the

---

<sup>11</sup> [http://findarticles.com/p/articles/mi\\_qa3673/is\\_4\\_129/ai\\_n32067859/](http://findarticles.com/p/articles/mi_qa3673/is_4_129/ai_n32067859/)

<sup>12</sup> <http://www.teachersalaryinfo.com/texas/teacher-salary-in-dallas-independent-school-district/>.

<sup>13</sup> Ibid. Although the reported size is 14:1, we use a more conservative 22:1 number.

Indirect Impact methodology above. This amounted to \$39.8 million in 2011. The total one-time economic impact due to the construction is \$78.6 million.

Beyond its potential to create direct and multiplier effects on the local economy, the new Children's Garden will contribute to the profile of Dallas as a visitor destination, thus benefiting the area overall. Not only will the new expansion provide an additional destination for inducing travelers to visit Dallas or extend their stay, but it will also have the potential to be a stimulus to the overall cultural tourism economy.

## 5.2. Visitor Growth

The Dallas Arboretum expects two significant events to affect the annual attendance in the next two years. First, an exhibition featuring Dale Chihuly's iconic sculptures and installations will be open from May 5 – November 5, 2012. As a comparison, when the same exhibit came to the Atlanta Botanical Garden in 2004, they doubled their annual attendance and saw gift shop sales up 400%. The Atlanta Convention and Visitors Bureau did an economic impact and estimated that the Chihuly exhibit brought in between \$50-\$60 million and approximately 1000 hotel-nights to the City of Atlanta during its nine-month run. The Phipps Conservatory and Botanical Gardens in Pittsburgh saw an increase of 104% in attendance over the same period the previous year due to this paramount exhibit in 2006.<sup>14</sup> Similarly, when a Chihuly exhibit was featured at the Desert Botanical Gardens in Phoenix in 2009, the six-month run attracted more than 550,000 visitors.<sup>15</sup> Therefore, we believe that a 50% to 150% growth in attendance at the Arboretum is a conservative estimate.

The second significant event in the Arboretum's upcoming season will be the opening of The Rory Meyers Children's Adventure Garden, a \$50 million, 7-acre outdoor science garden with 150 interactive exhibits opening in the beginning of 2013. Therefore, we conclude that the gain from the exhibit will be maintained in 2013 and beyond.

Currently, over one-third of Arboretum visitors bring children to the garden.<sup>16</sup> The Rory Meyers Children's Adventure Garden will make the Arboretum a more attractive destination not just for school groups, but also for families to visit. Conservatively, we can assume that the total annual attendance will grow by 50% in 2013 vs. 2012 as a direct result of the new Children's Garden.

## 5.3. Neighborhood Engagement

Our analysis below indicates that it would be highly beneficial to expand parking at the arboretum to support a greater number of visitors. The expanded parking space will not only support an increased number of visitors at the arboretum but will also provide independent benefits to the surrounding community. For instance, the additional parking

---

<sup>14</sup><http://phipps.conservatory.org/resources/images/classes/PG%20Chihuly%20Wrap%203%2008.pdf>

<sup>15</sup> <http://www.dbg.org/events-exhibitions/chihuly>

<sup>16</sup> Dallas Arboretum Spring 2010 Visitor Survey

would also provide a well-lit and safe environment for visitors of families of the community to park on holidays and weekend, the additional parking space would help reduce overflow parking on the surrounding neighborhood streets, increasing safety and aesthetic appeal. Thus, as our analysis has shown, the arboretum is good for surrounding real estate prices, and accommodating an increased number of visitors through an expanded parking lot will also provide independent benefits to the surrounding community.

#### **5.4. Parking**

It is important to consider attendance growth when analyzing parking demand and availability. If there are insufficient number of parking spaces to meet an increased demand, then either the visitors will decide to not attend the Arboretum (i.e., lost economic impact), or the visitors will park in local neighborhoods. While the most likely outcome is a mixture of the two situations, we believe that the negative impact of visitors parking in the neighborhoods due to a lack of parking at the Arboretum is larger than if the visitor did not attend the Arboretum. We base this conclusion on two factors. First, the local residents will be inconvenienced if they cannot find parking in their neighborhoods and/or around their shops because of overflow parking. And Second, Dallas' image as well as the image of the Arboretum would be tarnished since a lack of parking inventory suggests that the arts are not sufficiently supported by the city.

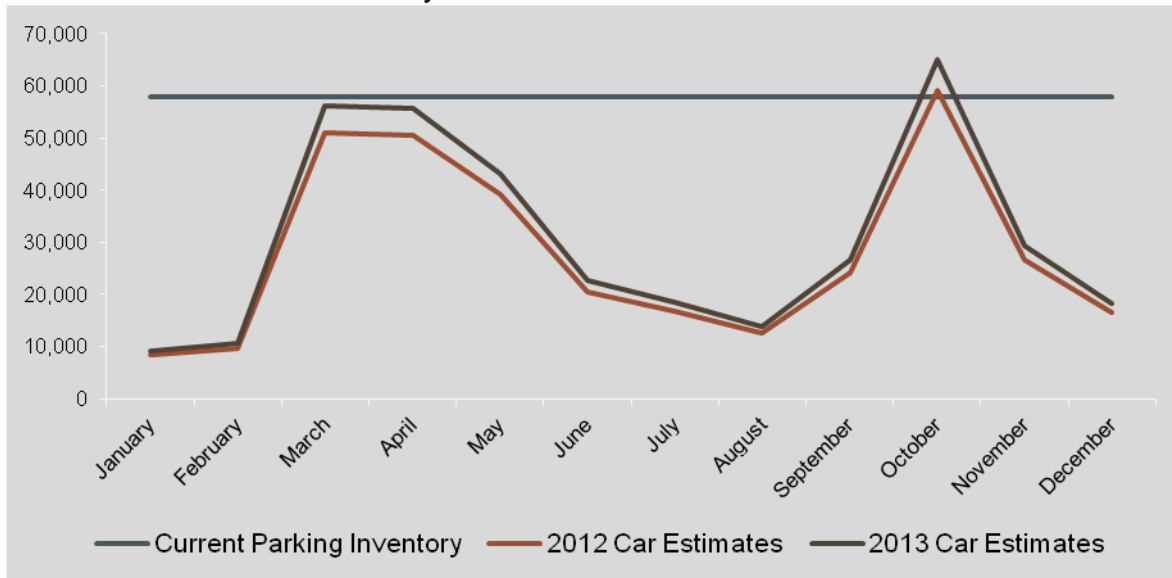
The following parking analysis in Table 2 includes current parking inventory for the Dallas Arboretum. There are currently 965 parking spots available for visitors, staff, and volunteers. Estimating 2 turns per day, and 30 days per month, current parking inventory is equal to 57,900 spaces a month. The two year average (2010 and 2011) of attendance levels, number of cars, average number of persons per vehicle (including volunteers and employees) per month is shown below.<sup>7</sup> The summer months (June, July, August), are relatively slow for the Arboretum. This allows excess inventory to be used for lake access during peak access periods for the lake.

Table 2 – Current Parking analysis.

2010/11 Two Year Average	Parking Inventory	Attendance	# of Cars	Attendance % of Total	# of People Per Car (inc volunteer & employees)
Jan	57,900	7,508	7,281	1.18%	1.0
Feb	57,900	10,864	8,374	1.71%	1.3
March	57,900	107,913	44,618	16.96%	2.4
April	57,900	103,178	44,214	16.22%	2.3
May	57,900	75,852	34,293	11.92%	2.2
June	57,900	36,284	17,938	5.70%	2.0
July	57,900	26,897	14,612	4.23%	1.8
August	57,900	17,302	11,058	2.72%	1.6
September	57,900	45,092	21,201	7.09%	2.1
October	57,900	126,929	51,664	19.95%	2.5
November	57,900	51,008	23,242	8.02%	2.2
December	57,900	27,280	14,454	4.29%	1.9
Total	694,800	636,107	292,949		2.2

Table 3 provides a base-case analysis for the growth of the arboretum, where we calculate demand on a monthly basis due to the high seasonality of demand. It assumes that there is no additional growth due to the exhibits or the Children's garden and that there is no construction budget for 2013. This last assumption severely understates the economic impact of the Arboretum in 2013, but makes calculating the total impact straightforward if the construction budget is known. This analysis also assumes that the Arboretum only meets its average growth rates of 10%. Finally, we use the number of people per car based on the two-year historical average for that month. Because the demand in October is greater than the supply, we estimate a loss of approximately \$2 million dollars over the two years in economic activity.

Table 3 – Base Scenario analysis.



	2012 Estimate	2013 Estimate	2 Year Total
Pct yearly change	10.00%	10.00%	
Imputed Impact	\$67,154,775	\$73,870,253	\$141,025,028
Total Impact	\$145,754,775	\$152,470,253	\$298,225,028
Loss from Parking	<b>\$274,210</b>	<b>\$1,614,219</b>	<b>\$1,888,429</b>

Next, we consider a scenario where the Arboretum experiences an additional 50% growth during the Chihuly exhibit (May-October), and the normal 10% yearly growth in Table 4. In 2013, we assume a 50% growth for every month where the Chihuly exhibit was not present (January-April, November-December), and a 10% growth for the remainder of the year (May-October). Additionally, we assume that the Arboretum experiences a 50% growth from the prior year for every month.

The loss now balloons to about \$23 million over the two years, even though the arboretum has the potential to generate almost \$165 million in economic activity. The reason for the loss is that under this scenario, there is insufficient parking in 2012 for October, and 2012 for March, April, May and October. It is also important to note that the growth rate appears to slow in 2013 due to the loss of the Chihuly exhibit.

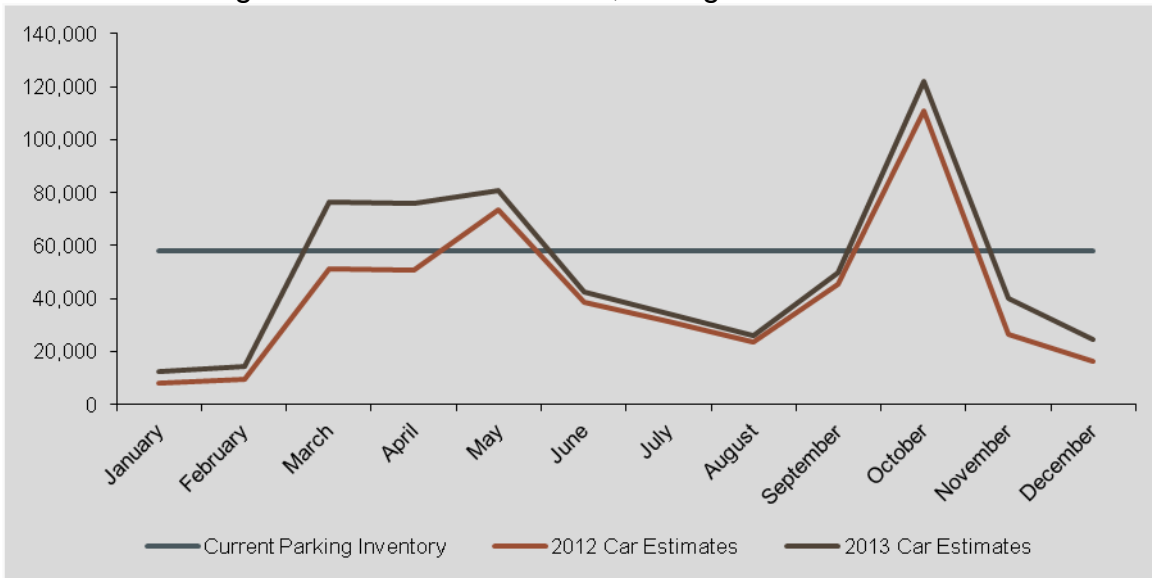
Table 4 – 50% growth in attendance



	2012 Estimate	2013 Estimate	2 Year Total
Pct yearly change	34.80%	25.80%	
Imputed Impact	\$82,304,051	\$103,530,351	\$185,834,402
Total Impact	\$160,904,051	\$103,530,351	\$264,434,402
Loss from Parking	<b>\$6,130,300</b>	<b>\$16,935,274</b>	<b>\$23,065,574</b>

Finally, we examine the scenario where there is a 100% growth during the Chihuly exhibit and only a 50% growth rate during 2013 (for the Children’s Garden). This analysis is shown in Table 5, and indicates a potential loss of more than \$42 million in economic activity over the two years. Similar to the previous scenario, this loss is driven by the high season months of May and October in 2012, and March-May and October in 2013.

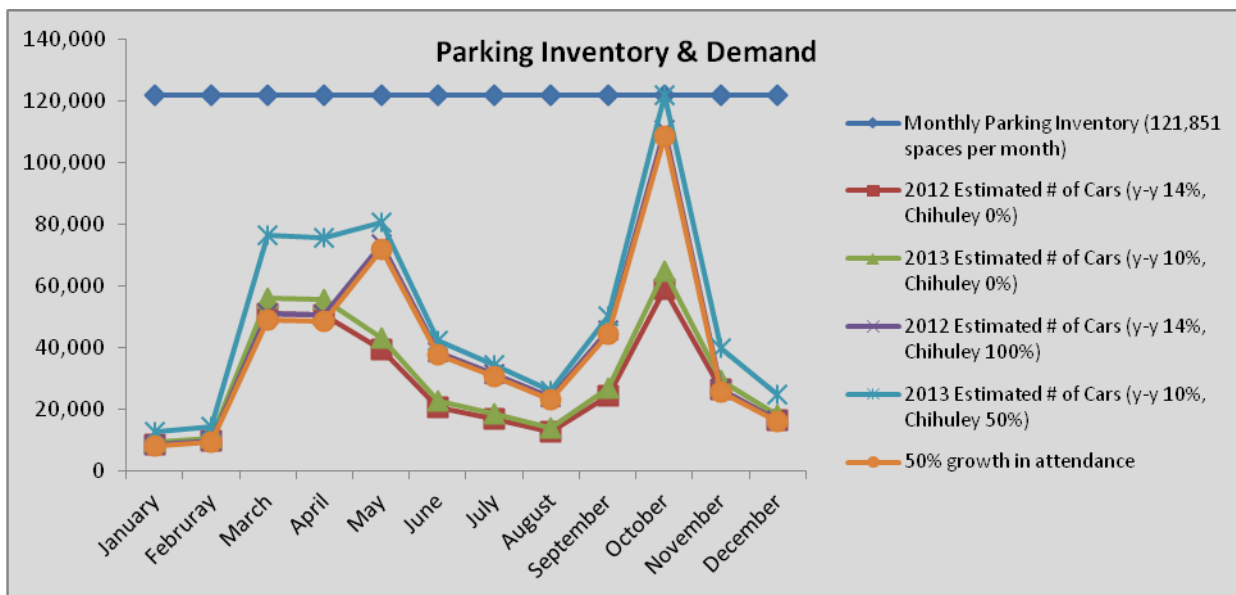
Table 5 – 100% growth in 2012 attendance, 50% growth in 2013.



	2012 Estimate	2013 Estimate	2 Year Total
Pct yearly change	59.60%	23.30%	
Imputed Impact	\$97,453,326	\$120,194,554	\$217,647,880
Total Impact	\$176,053,326	\$120,194,554	\$296,247,880
Loss from Parking	<b>\$15,176,062</b>	<b>\$27,226,494</b>	<b>\$42,402,556</b>

## 6. Resource Expansion

The optimal number of parking spaces was estimated for both 2012 and 2013 based on scenarios as graphed below. Ideally, the Dallas Arboretum would need to add 2031 spots to its current inventory of 965 spots in order to handle the attendance growth.





## **7. Summary of key conclusions**

The Arboretum has a profound effect on the North Texas economy by generating more than \$100 million of economic activity in 2011 and will continue to drive economic development in the area as its local and non-local attendance is expected to increase dramatically over the next few years.

The opening of the Children's Garden will represent an expansion project worth \$78.6 million in economic impact and will serve to further the mission of the organization as it seeks to provide educational programming, volunteer opportunities, and neighborhood engagement as well stimulate regional cultural tourism.

Current parking inventory is insufficient for projected attendance growth due to Children's Garden addition and exhibition schedule, which will result in a potential loss of economic impact between \$2 million and \$42 million.

Optimal number of parking spaces needed for projected attendance growth is 2031 which is an increase of 1058 parking spaces total.