



GRAYASSOCIATES

Campus Location Selection

Gray's Approach

December 2014

Objectives and Scope

Typically, the purpose of a location selection initiative is to prepare for growth by achieving the following objectives:

1. **Select the geographic markets in which you can succeed.**

- Define the broad region to be considered (e.g., “Midwest” or “continental U.S.”)
- Document the characteristics of a successful campus
 - Starts
 - Completions
 - Placement
 - Revenue
 - Profit
- Create predictive models that can also be used to evaluate other markets
- Identify and rank markets in which you could achieve these targets

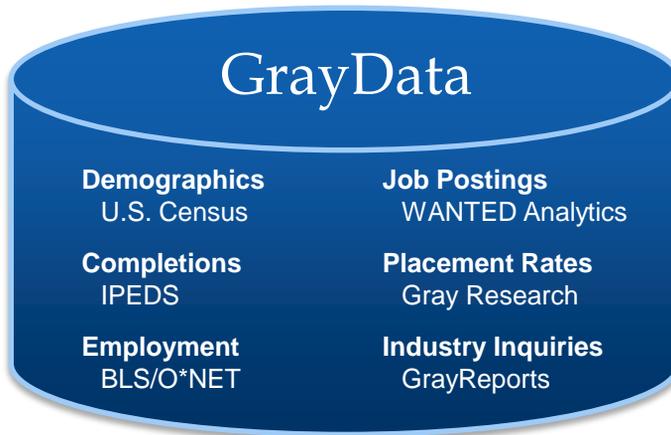
2. **Identify the most attractive locations within these markets.**

- Determine how many campuses the selected markets could support
- Evaluate each identified area’s convenience for students
 - Public transportation
 - Goods, services, and walkability
 - Safety
 - Employers, especially for clinical sites
- Summarize the areas and enable your team to make fact-based decisions on the best areas for a campus re-location
- Create a preliminary view of property options and costs

Approach

To achieve the objectives, Gray combines leading-edge databases and advanced analytics.

- **GrayData.** As illustrated below, Gray has assembled a database on the market-drivers of a successful campus or program, including inquiries, applications, demographics, competition, job openings, job postings, and placement rates. We have mapped all the data down to the census tract level. We have built crosswalks to link related variables, such as job openings and completions. We have invested in a BI tool (QlikView) that enables us to rigorously screen hundreds of cities, locations, or programs.



- **Advanced Location Analysis.** We have developed proprietary approaches to help you evaluate the effects of inquiry volume, distance, demographics, and competition on student demand for a current or potential campus. These techniques are described in more detail in the sections on Methodology and Deliverables.
- **Customized Predictive Models.** We combine advanced statistical techniques with data on your students, local demographics, and competition to build models that predict starts and other student outcomes (e.g., completions). We then run these models for every tract in a market to determine which areas have the greatest potential.
- **Access to Real Estate Options.** We can work with Cushman & Wakefield (or the real estate company of your choice) to identify preliminary property options and prices.
- **User-Friendly Approach.** Gray uses an enormous amount of data and complex analytics; however, we boil these down to clear maps and simple summaries. For those who want to understand the underlying techniques, we schedule “deep dives” so the techniques and their limitations can be fully understood.

Approach (continued)

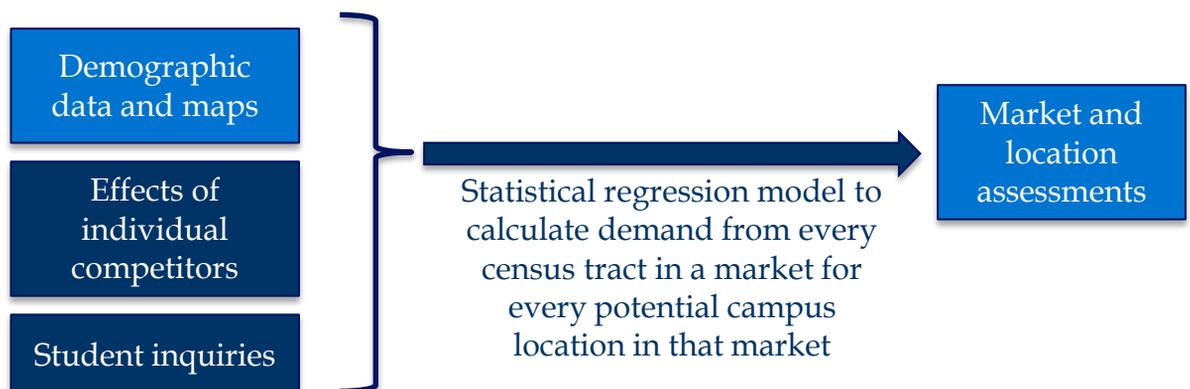
- **Analysis and insight, not just data.** Most institutions have access to demographic mapping software – sometimes Microsoft Maps, sometimes something a bit more sophisticated. Their typical decision process looks something like this:



Note that there is no tool or methodology for getting from the data to the assessments. In reality, most people end up focusing on a few measures (e.g., population and average income) which are believed to be related to campus size. Often, there is no formal analysis that explains the weight for each variable, or the combined effect of these variables on the likely campus size.

This approach often leaves out or simplifies competition. Some schools do track the number of competitors, but this doesn't distinguish weak from strong competitors. It also does not account for distance to each competing campus – but nearby competitors usually have a greater effect than more distant schools.

Gray's approach deals directly with all these challenges. We use a statistical technique that weights all the demographic data to accurately estimate how much demand your programs and schools would attract. This technique precisely captures the effect of distance between the student and the campus, making it practical to judge what would happen if you move or add a campus in a market. The model explicitly takes every competitor into account – its location and its competitive power. We also use our inquiry dataset to feed the model, so our models have a unique measure of student demand that has high predictive value. This approach is illustrated below.



Methodology

Gray's methodology starts with your targets for a new or relocated campus and ends when the location selection team has agreed on the best options. We break the work into three phases: market selection, location selection, and multi-location assessment.

Phase I: Market Selection

- 1. Kick-Off Meeting.** We recommend starting the project with a kick-off meeting for all of your managers who are part of your location selection team. In the meeting we:
 - **Review Project Objectives** and answer questions
 - **Refine the Work Plan** and reach agreements on tasks, responsibilities, and deadlines
 - **Schedule Meetings** to review progress and share findings
- 2. Campus Targets.** We ask our clients to provide their enrollment, outcome, and financial targets for a successful campus. If the targets are not known, we work with the client to analyze the drivers of success and determine appropriate targets.
- 3. Student Demand: Inquiry Volumes.** Gray provides relevant geo-coded data on industry inquiries and applications. We also map relevant demographic factors to help size student demand for your programs in every city in the U.S.
- 4. Student Demand: Predictive Models.** We build statistical models to predict your potential starts and completions using demographic data, distance analysis, competitive intensity, inquiries, and your historical start and completion files. We use these models to predict the number of starts and completions you should win from each current and potential city.
- 5. Competitive Intensity.** Gray calculates the number of completions for your programs in each city. We compare the completion volume to the relevant age group for your programs (often age 18-34) and determine the number of completions per capita. We compare completions per capita in each city to all other cities to identify cities with less intense competition.
- 6. Employment Opportunities.** For your programs, Gray compares completions to BLS job openings to create a job-openings-per-graduate ratio (JOG). We compare the JOG for each city to every other city to identify cities with greater employment opportunities for your graduates. In addition, we pull placement rates, by program and city, to see which cities have the best actual results for placement.
- 7. Campus Economics.** Every school has a unique set of economics that underlie the financial performance of a campus. Some require high volumes and scale in a few programs, while other schools flourish with small campuses and programs. We help you determine the economic drivers of your campuses and identify the types of cities that can support them (e.g., high-cost major metros, or lower-cost smaller cities).
- 8. City Scoring.** Using the data collected on student demand, competitive intensity, employment, and campus economics, we work with you to create and refine a scoring system that reflects your strategy. Using the scoring system, we help you rate and rank markets for your current and potential campuses.
- 9. Market Strategy Workshop.** We share the data, scoring system, and rankings with your team in a one-day workshop. We incorporate the team's suggestions into the scoring system and allow them to add their judgment to the quantitative analysis. At the conclusion of the workshop, you have a shared understanding and agreement on the data, scoring, and cities selected.

Methodology

For current campuses, or the cities selected in Phase I, we evaluate local markets to determine the attractiveness of current and potential future locations.

Phase II: Location Selection

- 1. Student Demand.** : In addition to the predictive models built in Phase I, we use several supporting demand datasets and analyses.
 - **GrayReports Inquiry Data.** Using our database of over 31 million inquiries, Gray pulls the number and location of inquiries for your programs and locations.
 - **Distance Analysis.** Gray analysis quantifies the effect of distance on your inquiries, starts, and completions.
 - **Demand: “Distance-Adjusted Demand Index (DADI).”** Gray weights the value of all inquiries based on their distance to a given tract. We map this DADI score to highlight the areas closest to most demand.
 - **Competition: “Distance-Adjusted Competitive Index (DACI).”** Gray uses the size, location, and distance to each competitor to estimate the intensity of competition in an area.
- 2. Initial Scan of Available Properties.** Optionally, Gray works with Cushman & Wakefield (or the real estate company of your choice) to help you identify sites that fit your criteria in neighborhoods that score highly on your criteria.
- 3. Convenience: Descriptive Maps.** We assess each area’s visibility and convenience to students by creating maps of employers (and potential clinic sites), transportation, crime, walkability, and traffic.
- 4. One-Page Summary.** We provide you with a clear, one-page summary of the potential size of each campus and other key factors.
- 5. Facilitated Learning and Area Selection.** We work with client teams to share our findings, answer questions, and incorporate their suggestions. We schedule “deep dives” with relevant executives, so they can contribute to and fully understand Gray’s methodologies. We also encourage the client to go to proposed sites, validate the feel of the area, and conduct appropriate hands-on evaluation. We ensure the client team understands where the best areas are for a new campus, why these areas were selected, and the tradeoffs among these and other choices.

Each of these steps and the associated deliverables are described in detail, below.

Tasks and Deliverables

Phase I: Market Selection

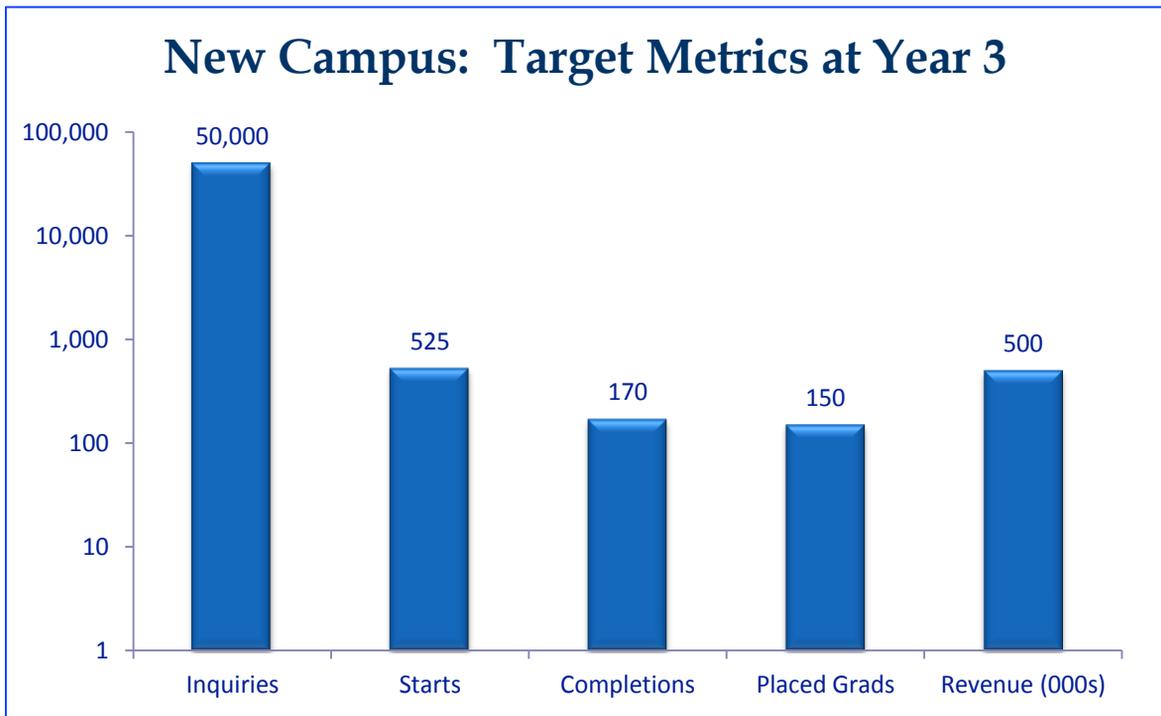
1. Kick-Off Meeting

We will facilitate a 1-2 hour kick-off meeting with the relevant members of your location selection team. In the meeting, we share and refine project objectives, tasks, and deliverables. We also ensure that the team's responsibilities are understood.

2. Campus Targets

There is a critical first step in location selection that is often skipped: defining the admissions, operations, and placement characteristics of a successful location. This step need not be complicated – a client may simply choose a current high-performing campus and use its metrics. Since few campuses are successful on every metric, some clients create a somewhat more complex combination of attributes from several campuses to use for its campus targets. As illustrated in the example below, these metrics then become the benchmarks that any new location must meet or exceed.

In this example, the new location must be in a market with at least 50,000 inquiries for its programs. This inquiry volume should enable the school to achieve 525 starts. Given this volume of starts, one would expect 170 completions. This leads to a critical constraint: given the school's placement target of 88%, it must be able to place at least 150 graduates a year.

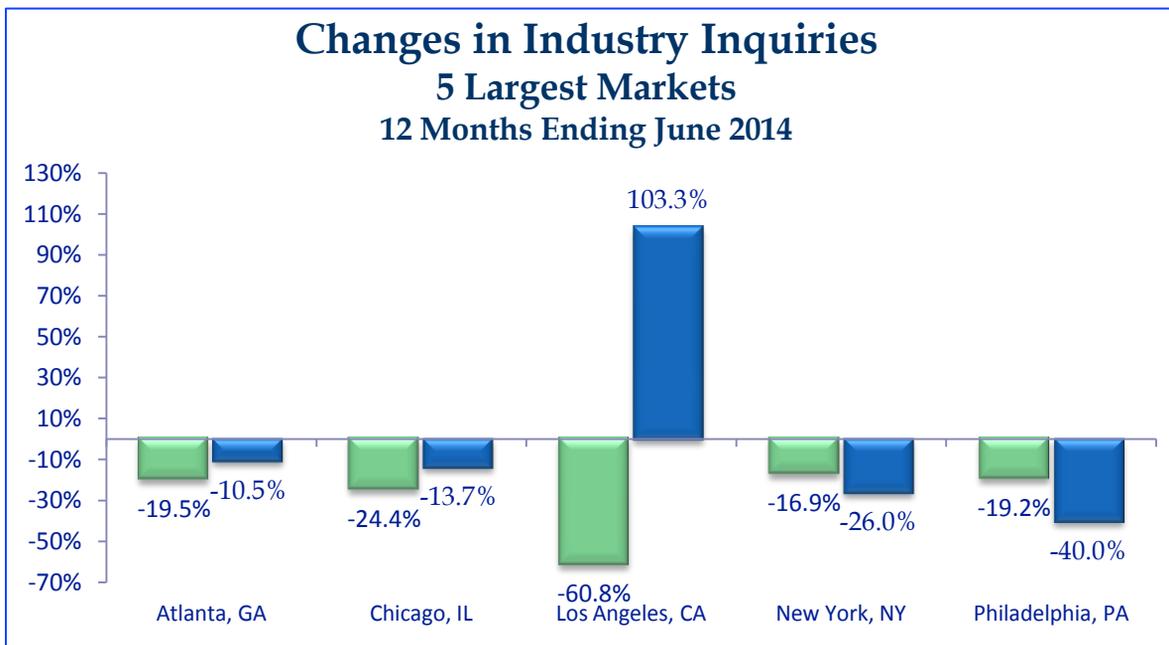
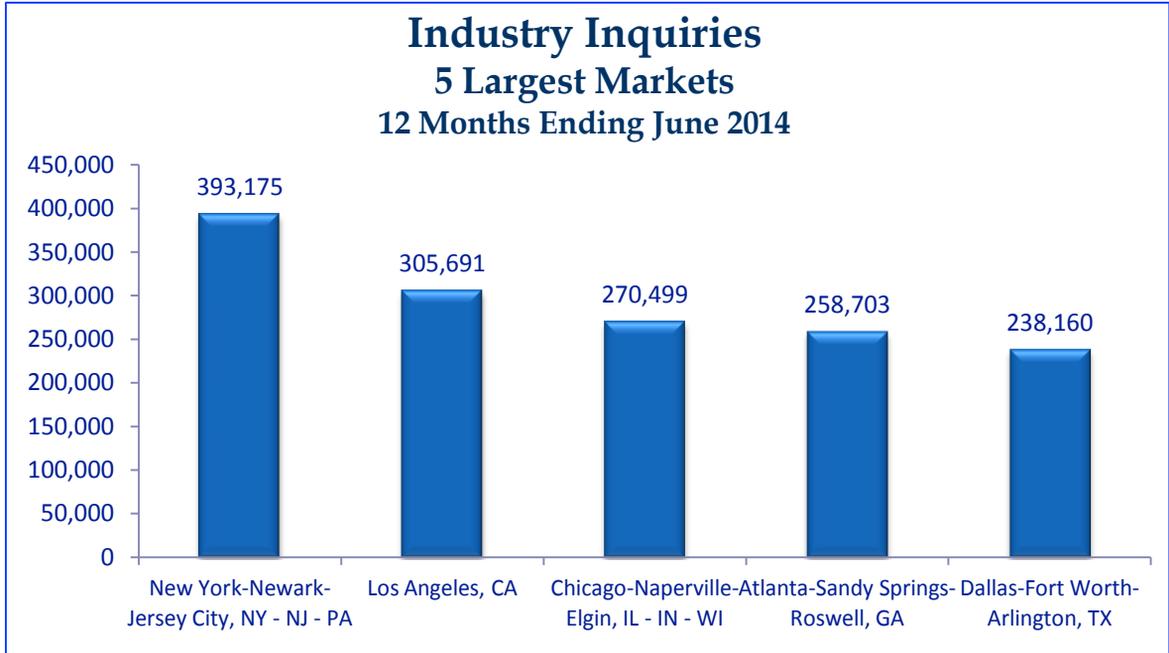


Tasks and Deliverables

Phase I: Market Selection

3. Student Demand: Inquiry Volumes

For each city, we pull inquiry volumes from GrayReports for the relevant programs. As illustrated below, this allows us to compare the size and growth of each market. We pull the data for these analyses for the specific programs you have selected.



Tasks and Deliverables

Phase I: Market Selection

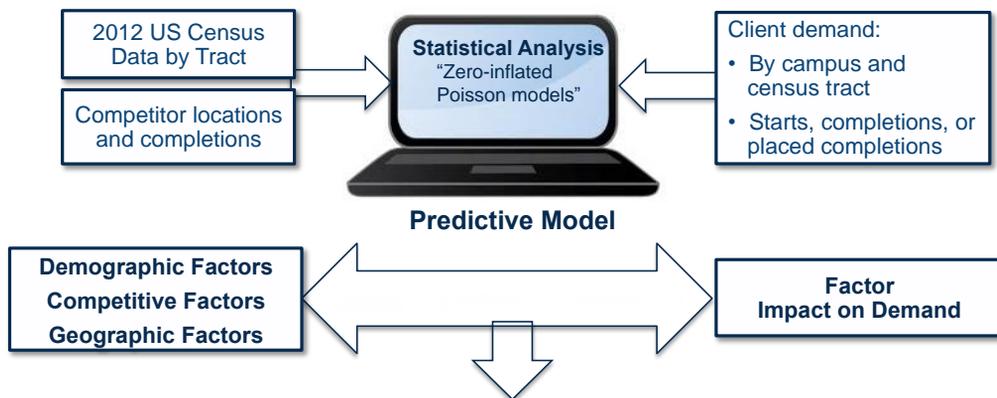
4. Student Demand: Predictive Models

We start this task by coding our client's starts and completions into census tracts. That enables us to compare client student data with over 300 census variables. In addition, we use proprietary techniques (described below) for estimating the effects of distance on student demand and competition. Our statistician uses this information to build custom models of the relationship between your student demand – starts, completions, or placed completions – and population, inquiries, distance, demographics, and competition.

For market selection, your model can be used to determine the relative student demand for every market in the country. In other words, it can rank-order every market and provide an estimate of the number of starts and/or completions that you could obtain from a centrally-located campus in that market.

Later, your model can be used to predict how many total students you would attract at any new location within a market – and we run this estimate for every neighborhood (census tract) in the city. This enables us to create a map that shows the peak areas for your predicted starts and for your predicted completions.

We also provide an estimate of the accuracy of the model predictions, so you have a clear understanding of the underlying uncertainties.



Predicted Starts (or other Demand Metric) by Tract and Campus Location

Location	Predicted Starts
Option 1	1,000
Option 2	762
Option 3	300

Tasks and Deliverables

Phase I: Market Selection

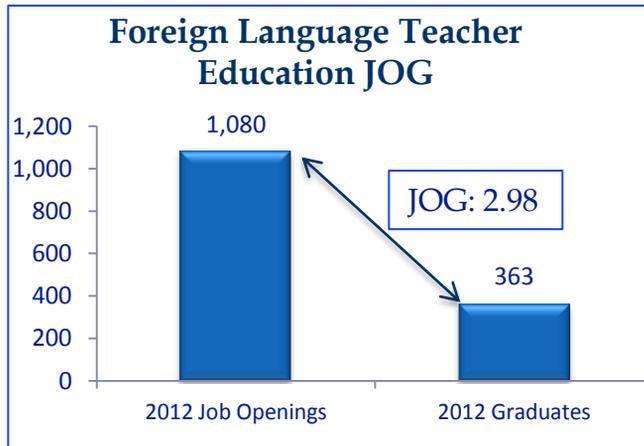
5. Competitive Intensity

The best metric we have developed to measure competitive intensity is completions per capita for the program you select. Using completions per capita, we can compare every market in the U.S. to every other market, again using the specific programs you select. This metric can also be broken down to distinguish for-profit completions per capita from not-for-profit completions per capita.

6. Employment Opportunities

In today's regulatory environment, access to sites for internships and clinical rotations is very important, especially in healthcare. As part of our city evaluations, we size the local employment market and we pull local placement rates from our database.

Using BLS, we also track job openings for your programs in the local market. We will compare BLS projected job openings to the number of graduates, to create our Job Opportunities per Graduate (JOG) ratio. When there are more jobs than grads (JOG>1), the employment outlook is healthy. However, placement results often exceed – by a wide margin – what BLS would suggest. Therefore, we strongly advise using BLS data only in combination with actual placement results.



In our view, actual placement rates for competing schools offering the same programs will be the best indicator of employment market health. If the average rate in the local market for your programs declines to 70% or below, placing additional students will likely be a challenge.

Gray Placement Analysis By City for Selected Programs

City	2011 Completions	Placement Rate	Placed Students
City 1	148	67%	99
City 2	242	71%	173
City 3	147	71%	104
City 4	227	73%	166
City 5	21	35%	7
Total	785	70%	549

Tasks and Deliverables

Phase I: Market Selection

7. Campus Economics

Some education institutions thrive on economies of scale and must run large volumes of students through a few programs to make money. Others benefit from economies of scope and make money by having a portfolio of smaller programs, often on smaller, highly local campuses. In both cases, the costs of facilities, faculty, and marketing vary significantly by market. We can help you model the underlying economics of your campuses and determine the characteristics that drive success. As an example, we found that one client, who focused on large cities, might have done much better in secondary markets where there was less competition and much lower costs.

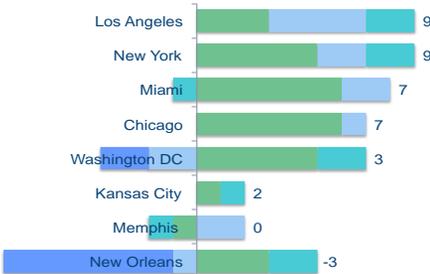
8. City Scoring

Using the data collected on market size, competition, employment, and economics, we will draft a scoring system that allows you to rate and rank hundreds of metropolitan areas in the U.S. We will refine the system with your input and prepare summaries that can be shared with the management team in the Market Strategy workshop.

City	City Attractiveness					
	Student Demand			Jobs	Saturation	
	Population	Population Index	Inquiries Index	Annual Job Openings Index	Job Openings per Graduate Index	Graduates Per Population Index
Orange Park	116,218	15%	27%	8%	67%	16%
Largo	176,138	23%	24%	23%	63%	32%
Pompano Beach	770,441	100%	100%	100%	37%	54%
Lakeland	137,450	18%	22%	9%	50%	20%
North Orlando	372,597	48%	42%	51%	31%	67%
Tampa	216,510	28%	24%	31%	32%	70%
South Orlando	207,512	27%	28%	33%	100%	24%
Brandon	168,768	22%	20%	23%	21%	100%
Jacksonville	186,441	24%	28%	9%	9%	85%
Melbourne	94,387	12%	12%	8%	32%	41%

City Scores

■ Student Demand ■ Employment Opportunities ■ Economics ■ Competitive Intensity Overall Score



Tasks and Deliverables

Phase I: Market Selection

9. Market Strategy Workshop

In the workshop, we share the data and analysis with your team, enable them to refine the scoring, and incorporate their judgment into the final evaluations of current markets and selection of new markets. They leave understanding the data, selection process, and choices made by the team.

Phase II: Location Selection

Once the right cities are chosen, we focus on helping you select the best possible locations for campuses in each city. This could apply to re-location of a campus coming up for lease renewal, or selection of new locations in new cities. Our approach leverages the data collected in Phase I, including the custom models that predict student demand for your new locations.

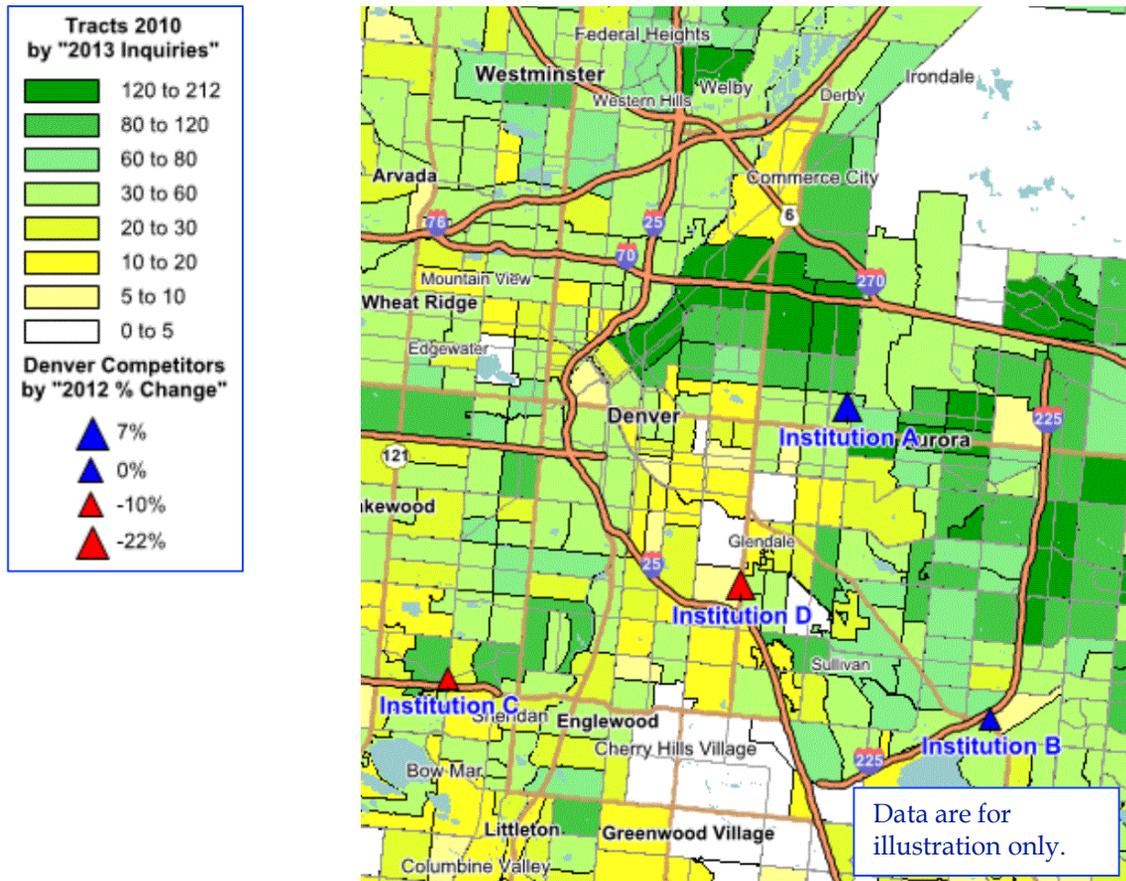
Tasks and Deliverables

Phase II: Location Selection

1A. Demand: Inquiry Maps

Our inquiry maps are unique. We have agreements with major aggregators and agencies who share their inquiry data with us. This dataset now includes over 30 million inquiries, covering hundreds of cities and programs. Further, most inquiry maps are at the zip-code level; ours are at the census-tract level, which is nearly twice as precise. We also include competitors on these maps – scaled by their enrollment or, in this case, by their change in enrollment (2011 vs. 2012).

As illustrated in the map below, we create inquiry maps for the cities you choose to explore, so you can see where inquiries and demand come from in the area.



But seeing where demand comes from by census tract does not answer the question – where would the most students be willing to travel to go to school?

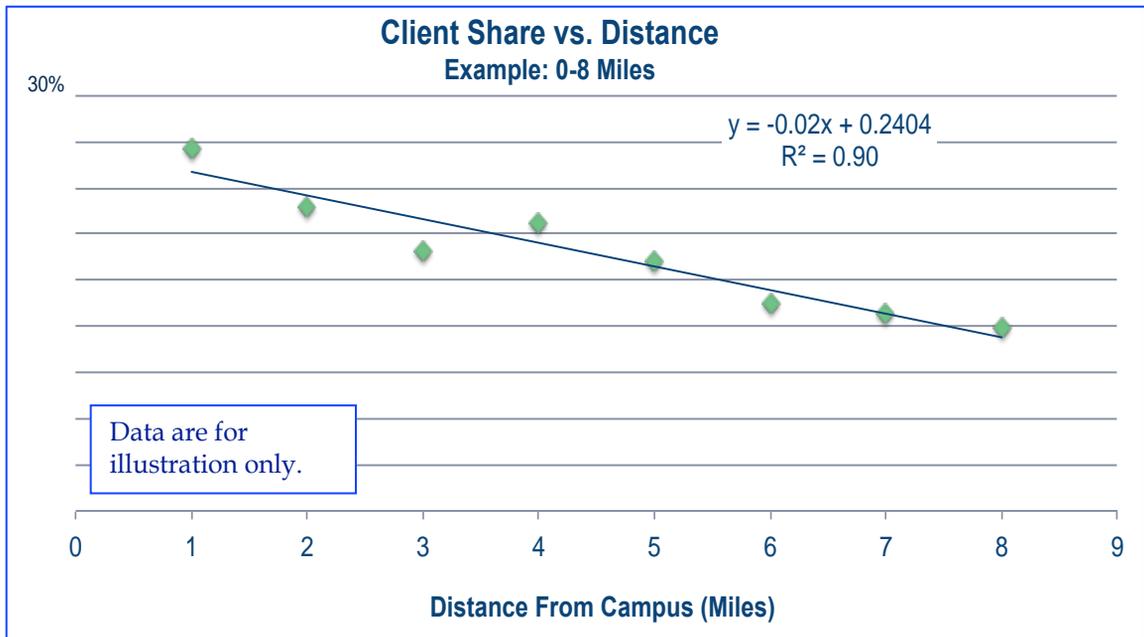
Tasks and Deliverables

Phase II: Location Selection

1B. Demand: Distance Analysis

In our view, the effect of distance is profound: potential students who are further from a campus are less likely to inquire, apply, start, and complete. The question we help answer is, “How large is this effect?” To assess the effect of distance, we compare your data with GrayReports inquiries and demographic information to measure erosion in inquiries and starts as distance from campus increases. Using your historical data, we also evaluate the effect of distance on retention.

Let’s look at one example: share of inquiries. In our experience, we have found that share of GrayReports inquiries drops quickly as distance increases. As shown in the illustration below, in areas within a mile from campus, this hypothetical client’s share of inquiries is over 20%; 8 miles away, it is just 10%. (Note: data has been disguised.)



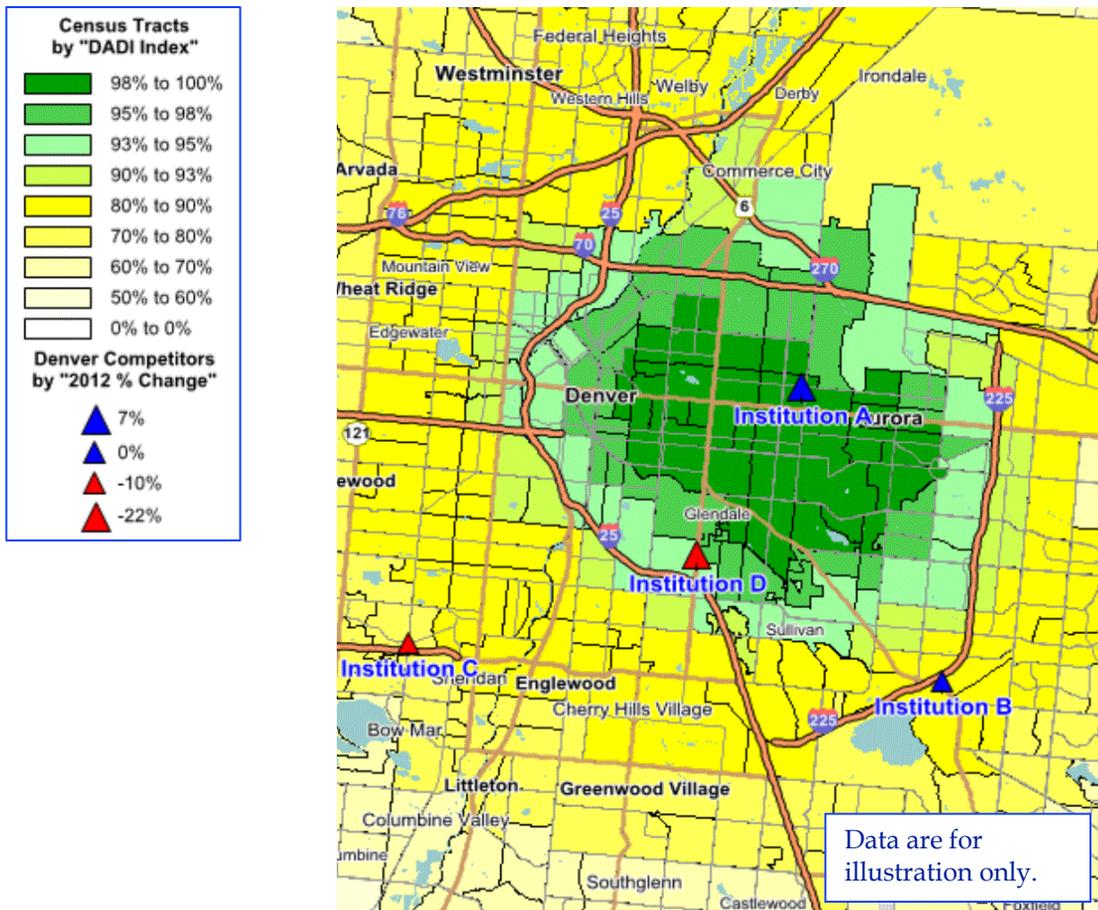
Once we develop a distance equation that accurately portrays the impact of distance on student demand for your programs, we apply it to help evaluate both demand and competition. Next, we’ll show how it can be used to identify the peak-demand locations in a city.

Tasks and Deliverables

Phase II: Location Selection

1C. Demand: Distance-Adjusted Demand Intensity (DADI)

Using the distance equation and our inquiry data, Gray estimates the Distance-Adjusted Demand Intensity (DADI) - essentially the distance-weighted inquiry volume for a location given its distance to every other tract. The tracts with the highest DADI scores are closer to more inquiries than all other locations in the city. We will also estimate how far off-peak every other location is; in this example, each change in color shows a 2-3% drop in DADI at the high end (greens) and a 10% swing below that. The fastest growing campus (+7%) is also in the Max DADI area, while those outside this area tend to be shrinking.



Using similar techniques, we can also help you understand competitive intensity, by neighborhood, and program.

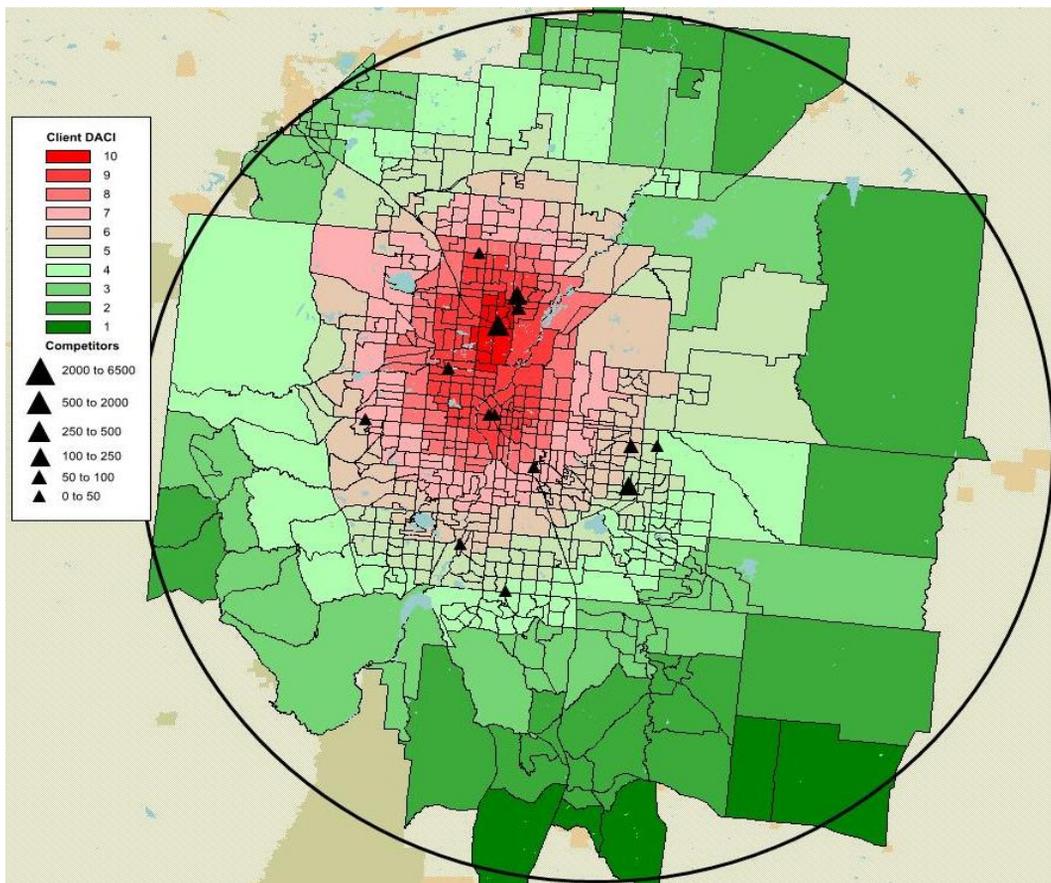
Tasks and Deliverables

Phase II: Location Selection

1D. Competition - Distance-Adjusted Competitive Intensity (DACI)

We use the distance equation, combined with our data on competitors' size and campus locations, to identify the neighborhoods with greater competitive intensity. This analysis assumes that larger schools have greater competitive weight, because they attract more students. Presumably, this may be because they are better known or may have higher marketing budgets. We also assume that schools that are closer to a neighborhood will compete more effectively in the area. More specifically, we use the validated distance equation to estimate your competitors' geographic reach. We call this calculation the Distance-Adjusted Competitive Intensity (DACI).

We use DACI to help you visualize competitive intensity. For example, in the map below, we can see that competition is most intense north and west of the city. We also use DACI as input to our predictive models to help estimate the competitive effects on demand for potential new locations.



Tasks and Deliverables

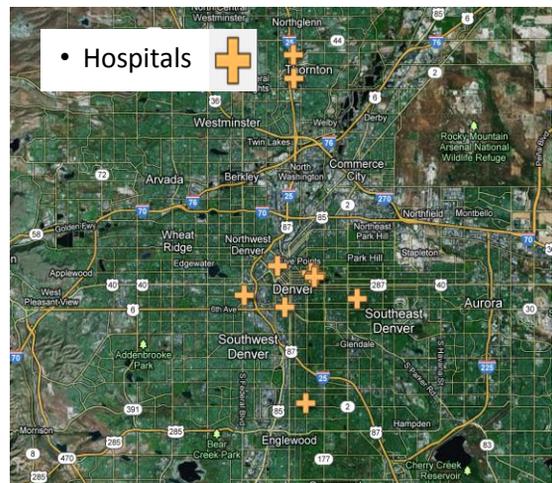
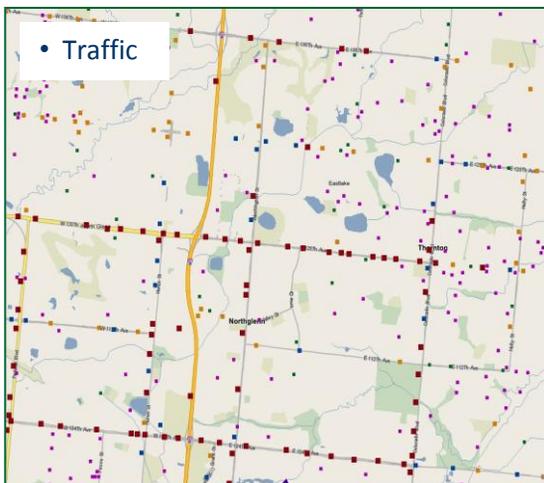
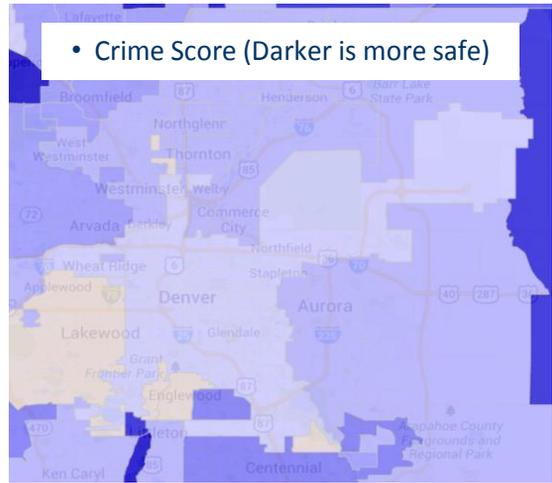
Phase II: Location Selection

2. Initial Scan of Available Properties

Working with Cushman & Wakefield's Education Group or the real estate firm of your choice, we can help you identify properties available in or near the highest potential areas in the city.

3. Convenience, Descriptive Maps

We also explore the areas near high-demand locations to be sure they are convenient and safe for students. Walk Scores summarize access to stores and services near the site, such as transportation and restaurants. It is important that the neighborhood is safe, so we also map local crime rates. To evaluate access to employers, we map their locations for each program and employer type. Traffic counts and public transportation maps are also provided.



Tasks and Deliverables

Phase II: Location Selection

4. One-Page Summary

Perhaps the most important deliverable we provide is a summary of each location, including Max DADI score, predicted starts, cannibalization (if you have more than one campus in an area), employment, walk score, crime, and other factors. This page allows the senior team to make an efficient, fact-based decision on the best option for a new location.

		Denver Location Options			Benchmark	
		Thornton	Aurora	Englewood	Campus	
Demand	Distance Adjusted Demand Index (DADI)	90%	98%	70%	85%	100% = Maximum DADI in this city
	Predicted Starts (Custom Model)	1,050	1,150	823	1,000	Starts predicted using custom model built for client
Placement	BLS Job Openings	150	275	135	145	BLS data on job openings compared to IPEDS completions
	Competing Completions	148	242	147	140	
	JOG Ratio	1.0	1.14	0.92	1.0	
	Actual Placement Rate	75%	78%	69%	75%	Gray placement database
	Overall	Good	Very Good	Poor	Good	
Convenience: Employers within 5 Miles	Dentists	50	75	30	55	Count of the number of relevant employers within 5 Miles
	Doctors	75	80	65	65	
	Hospitals	5	10	1	3	
	Pharmacies	30	50	15	40	
	Total	160	215	111	163	
Convenience: Neighborhood Quality	Walk Score	68	71	80	70	Crime rate in local area
	Crime Score	Low	Moderate	High	Moderate	
	Traffic Volume (cars/Day 000s)	18	25	16	17	
Real Estate Market	Property Availability	5	3	10		Relevant properties available to lease
	Property Quality	Good	Good	Good	Good	Quality of available buildings
	Traffic (Cars/Day)	High	High	High	Moderate	
	Cost per Square Foot	\$7	\$10	\$7.50	\$8	Annual lease cost per square foot.
Overall Assessment		Good	Excellent	Poor	Good	
Key Concerns		Demand	Cost	Demand		
			Availability			

Tasks and Deliverables

Phase III: Multi-Location Assessment

1. Identifying the Next Best Location

In the selected geographic markets, we follow a similar process as in Phase II for picking the one best campus location. However, for each potential location, we include your existing campus locations in the analysis, assigning each census tract to the most appropriate campus. If desired, we can also look at relocating campuses or adding multiple campuses into the market.

2. Calculating Cannibalization and Net Demand Gains

For each campus location – including existing campus location(s) in the market, we calculate the total demand captured by that campus in that scenario. That lets us calculate changes in student demand at the existing locations (cannibalization), estimated size of the new campus, and estimated change in total starts for that geographic market with the new campus.

3. Facilitated Learning and Area Selection

We work with you to schedule meetings to explain the location selection process and criteria to your team. We create detailed descriptions of the methodology for your experts and concise summaries for the managers involved in the process. Given the complexity of your opportunities – many potential markets, many potential unique campus locations, comparisons of adding campuses in existing markets vs. expanding to new markets – it may be best to schedule an on-site workshop to work through these alternatives.