



METHODOLOGY FOR FEASIBILITY STUDIES FOR WATERPARKS

BY DAVID J. SANGREE, MAI, CPA, ISHC

Before a developer or an organization considers constructing a new indoor or outdoor waterpark at a resort or standalone facility, the mortgage lender and investors generally require a feasibility study. Typically performed by an independent, third-party consultant who specializes in analyzing the performance of waterpark and hotel projects, a feasibility study determines whether a proposed waterpark development is economically feasible and if the value of the proposed project equals or exceeds the development costs when completed and operational. The feasibility study analyzes revenues, expenses and net income to determine the value of the proposed project compared to projected development costs.

This article explains the major components of a feasibility study that are analyzed to determine the potential success of a waterpark project. Some of these components are common to both indoor and outdoor projects, while others are type-specific. Hotel & Leisure Advisors defines waterparks as follows:

- An **OUTDOOR WATERPARK** is a facility offering three or more waterslides and other aquatic facilities.
- An **INDOOR WATERPARK RESORT** is a lodging establishment containing an indoor aquatic facility with a minimum of 10,000 square feet of indoor waterpark space inclusive of amenities such as slides, tubes and a variety of indoor water play features.
- A **STANDALONE INDOOR WATERPARK** is an aquatic center without an attached hotel, having a minimum of 10,000 square feet, inclusive of amenities such as slides, tubes and a variety of indoor water play features.
- A **RESORT HOTEL WITH OUTDOOR WATERPARK** is a hotel with three or more water play features, such as slides, “lazy” rivers or wave pools that require lifeguards.

MAJOR COMPONENTS OF A FEASIBILITY STUDY

The following major components are essential to a market feasibility and financial analysis study for an indoor waterpark resort or outdoor waterpark project:

1. Area, Demographic and Neighborhood Analysis
2. Site Review
3. Proposed Development Recommendations and Costs
4. Market Analysis
5. Proposed Development Usage and Pricing Analysis
6. Financial Analysis
7. Feasibility Analysis
8. Comparison of Value Created to Projected Costs

AREA, DEMOGRAPHIC AND NEIGHBORHOOD ANALYSIS

The area, demographic and neighborhood analysis evaluates the local economy surrounding the proposed development. The area analysis focuses on the social, economic, governmental and environmental forces that influence the performance and valuation of

a waterpark facility. Demographic information, including population, households, income levels, employment levels, etc., should be reviewed in detail to determine the number of people and potential customers who live within the local and regional areas. The following are some questions the study should answer:

- **POPULATION TRENDS:** What is the area population and is the number increasing or decreasing?
- **HOUSEHOLD GROWTH:** How large is the typical household? How many children are there per household? The number of children in the area is a particularly crucial data point since waterparks are family-oriented facilities.
- **HOUSEHOLD ECONOMICS:** What is the unemployment rate? What is the median income? How much disposable income do area households have?
- **AREA ECONOMICS:** Which large corporations are based in the area? Are there tourist attractions in the area? When answering these questions, a consultant will look for existing and potential demand generators that are under development or those that may be leaving the market soon.
- **AREA TRANSPORTATION:** How is the access to airports, interstate and local highways and rail stations compared to the competition?

A neighborhood analysis of nearby commercial and tourist establishments is important because successful waterpark projects are typically located in areas with complementary real estate uses. The most successful indoor waterpark resorts are near other major tourist attractions that draw overnight visitors. The most successful outdoor waterparks are typically in areas that attract both residents and tourists and may be near major retail outlets, beaches or community facilities.

SITE REVIEW

The site review evaluates the subject parcel’s size, access and visibility, topography, availability of utilities (including water and sewer) and other site related attributes necessary for a successful waterpark project. The waterpark’s proximity to leisure guests is an important consideration since waterpark visitors appreciate convenient access from area highways. Our firm typically analyzes a drive time or mileage radius and estimates the number of available youths and adults within a 30-, 60-, 90-, 120- and/or 180-mile (or





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minute) ring from the subject property. We obtain the demographic data from sources such as Claritas or ESRI. Youth and adult populations within specific drive times from the subject site to those of other successful waterparks (indoor or outdoor) are benchmarked to comparable markets throughout the United States to determine whether the subject site has an adequate population base. The following are some questions the study should answer:

- **DRIVE TIME DEMOGRAPHICS:** What are the population and household income levels within various drive times of the subject property, and how do they compare with locations such as Wisconsin Dells, Sandusky, Poconos, Orlando or other established waterpark markets?
- **SITE:** Is the site large enough to support the planned waterpark project? Is there room for future expansion?
- **AMENITIES:** Are there nearby amenities that would complement the proposed project?
- **GOVERNMENTAL IMPACTS:** How do the subject's ad valorem taxes, zoning, sales history, governmental restrictions, environmental regulations and other factors affect the subject property?

PROPOSED DEVELOPMENT RECOMMENDATIONS AND COSTS

The consultant should review plans for the facility, the scope of the development and projected costs. Some clients provide their development plans, which are reviewed so the consultant can recommend changes and appropriate improvements. Other clients request that the consultant recommend the scope of the development based upon their market research for the feasibility study.

For an outdoor waterpark, the scope of recommendations includes the size of the outdoor waterpark, rides and attractions, food and beverage outlets, size of gift shop and arcade, dry attractions and other amenities to include.

An indoor waterpark resort receives the same recommendations along with the number of guestrooms, size and amenities of

the indoor waterpark, number of restaurants and lounges, amount of meeting space, spa, family entertainment center (FEC) and other amenities.

The consultant may estimate a range of costs for the proposed development based upon recently constructed waterpark projects, or the client may hire an architect and/or engineer to perform a formal cost estimate for the proposed development. The following are some questions the study should answer:

- **PHYSICAL PLANT INFORMATION:** Have any architectural plans been developed by the client?
- **FACILITY SIZE:** How large should the project be? How many rides and attractions should the waterpark offer? How many guestrooms should the hotel offer? How many food and beverage outlets should be developed within the hotel and waterpark? What is the design day size and capacity for the park?
- **BRANDING:** For an indoor waterpark resort, should the hotel have a franchise affiliation?
- **THEME:** What type of theme should the waterpark have? How elaborate should the theme be?

MARKET ANALYSIS

A thorough market analysis of the local and regional hotel and indoor waterpark resort or outdoor waterpark market is essential. The projections of financial performance for the project will depend heavily upon the data gathered. Typically, an indoor waterpark resort will attract primarily overnight guests with some local users while an outdoor waterpark will attract primarily local users with some overnight guests.

HOTEL MARKET

In preparing a study for an indoor waterpark resort, the consultant analyzes occupancy, average daily rate (ADR) and revenue per available room (RevPAR) of a market area. A hotel market report from STR and interviews with management of competitive hotels will help gain a greater understanding of the state of the hotel market. Additionally, the consultant identifies all new hotels that are proposed or under construction that could compete with the proposed resort project. For an outdoor waterpark analysis, the consultant would want to analyze the performance of hotels in the market, but there is less emphasis on overnight guests in this type of project. The following factors are critical to the market analysis:

- **HOTEL COMPETITORS:** How many existing competitors are in the market and to what degree are they competitive in terms of amenity offerings, affordability, etc.? How have

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FOR INDOOR WATERPARK RESORTS, THE HOTEL IS THE KEY DRIVER OF OPERATING PERFORMANCE FOR THE PROPERTY.

they performed in past years in terms of occupancy, ADR and RevPAR?

- **INDOOR WATERPARK RESORT COMPETITORS:** What indoor waterpark resorts exist within the region and what are their occupancy, ADR, RevPAR and waterpark attendance performance?
- **DEMOGRAPHIC ANALYSIS:** How many indoor waterpark resort rooms exist within a reasonable drive of the proposed subject on a per household basis compared to competitive locations?
- **RECENT HOTEL OPENINGS:** How many hotels have opened in recent years and how have they impacted the market?
- **POTENTIAL HOTEL OPENINGS:** How many hotel projects are in the works? What types of hotels will they be? How many rooms will they have? What is their projected impact on the current supply and demand in the market?
- **MARKET SEGMENTATION AND MARKET PENETRATION:** What is the market segmentation and penetration of each competitor in the market? The consultant reviews all market segments but gives special attention to the leisure market. Hotels in the area that garner the largest share of the leisure market will be the subject property's main competitors.
- **PROJECTIONS:** Based on the current market situation, is the subject likely to perform well in terms of occupancy, ADR and RevPAR? What are its potential penetration rates and market segmentation? Synthesize the data and project the performance potential for the subject property.

WATERPARK RESORT MARKET

An analysis of the existing indoor and outdoor waterparks' attendance and pricing is very important. The consultant will need to research a variety of published sources and conduct interviews with managers of the various waterparks to determine the number of attendees, average prices and total revenues at the comparable properties. In some cases, waterpark managers are unwilling to share this information, and there is no STR type organization that tracks waterpark attendance. Our firm consistently collects waterpark performance data that is maintained in our proprietary database. Below are things to consider:

- **EXISTING AND POTENTIAL COMPETITORS:** How many indoor and outdoor waterparks are in the area? How many are proposed?
- **ATTENDANCE:** How are existing waterparks performing in terms of attendance and usage?

- **DEMOGRAPHICS:** What is the population for a 20-, 40- and 60-minute drive around each competitor on a per attendee basis compared to the subject site?
- **AMENITIES OF COMPETITORS:** To what degree will existing and potential waterparks be competitive in terms of size, amenities, pricing, theming, etc.?
- **WATERPARK PRICING:** What are the rack rates for the competitive waterparks? What is the average ticket price per attendee at the competitive properties? For an indoor waterpark resort, the focus should be on other indoor waterparks attached to hotels. For an outdoor waterpark, the focus should be on existing outdoor waterparks.

PROPOSED DEVELOPMENT USAGE AND PRICING ANALYSIS

INDOOR WATERPARK RESORTS:

For indoor waterpark resorts, the hotel is the key driver of operating performance for the property. In estimating the performance of a hotel, the study will project the number of occupied rooms, ADR and usage levels for the hotel property. A detailed supply and demand model helps to calculate the historical performance of the market and makes projections for the subject property. The potential number of day pass users for the indoor waterpark is calculated by analyzing the number of overnight guests versus capacity for day pass users. The following are some questions to consider:

- **OCCUPANCY AND ADR:** What is the historical and projected performance of the competitive set of hotels in the market? How will the subject property penetrate the existing demand in the commercial, group and leisure segments? What is the projected ADR by segment? Does the projected ADR include usage of the waterpark?
- **DEMAND:** What is the projected performance of the subject property? How plentiful are demand generators in the area? What is the regional population of families with children who might visit the waterpark resort?
- **DAY PASSES:** Will the subject offer day passes? Indoor waterpark resorts are split between those that allow for day passes and those that require guests to stay overnight.
- **PROJECTIONS:** How many waterpark visitors can the subject property expect, and will these visitors come from the subject hotel, nearby hotels or will they be residents or day pass users?
- **PRICING:** What is the optimal waterpark admission charge for non-overnight guests?

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DISCOUNTED CASH FLOW ANALYSIS - AS COMPLETED

Proposed Indoor Waterpark Resort

CASH FLOW AT DISCOUNT RATE OF 11.0%

Year	Net Income		P.V. Factor	=	Present Value
2021	\$15,134,000	x	0.9009	=	\$13,634,234
2022	\$16,757,000	x	0.8116	=	\$13,600,357
2023	\$17,564,000	x	0.7312	=	\$12,842,645
2024	\$18,000,000	x	0.6587	=	\$11,857,158
2025	\$18,452,000	x	0.5935	=	\$10,950,364
2026	\$18,912,000	x	0.5346	=	\$10,111,127
2027	\$19,385,000	x	0.4817	=	\$9,336,948
2028	\$19,871,000	x	0.4339	=	\$8,622,553
2029	\$20,367,000	x	0.3909	=	\$7,961,965
2030	\$20,876,000	x	0.3522	=	\$7,352,203
Present value of cash flow					\$106,269,555

REVERSIONARY BENEFIT

Net Income for 2031	\$21,396,000
Divided by reversion overall rate	9.0%
Gross reversion	\$237,733,333
Less cost of sale at 2.0%	\$4,754,667
Net reversion	\$232,978,667
Value per room	\$582,447

Present value of reversion \$82,051,470**MARKET VALUE**

PV from cash flow	\$106,269,555
PV from reversion	\$82,051,470
Market value as of 1/1/2021	\$188,321,026

Rounded market value \$188,300,000**VALUATION FACTORS**

Price per room	\$470,750
% of value from cash flow	56.4%
% of value from reversion	43.6%

Source: Hotel & Leisure Advisors

OUTDOOR WATERPARKS:

For outdoor waterparks, the key figures to estimate include the number of attendees and the average ticket price. Outdoor waterpark attendance varies depending upon location, pricing, amenities, attractions, number of rides and slides, size, climate and marketing efforts. The study should thoroughly analyze each of these factors. The pricing for outdoor waterparks will heavily depend upon the investor's criteria. Many municipally owned outdoor waterparks charge much lower prices because they will not have to pay debt service and are taxpayer-funded, while most privately owned outdoor waterparks try to achieve the highest possible prices to provide sufficient funds for payment of debt service and investor profit. The following are some questions to consider:

- **USAGE:** What are the historical and projected usage levels and pricing of waterparks and amusement parks within the region?
- **FACILITIES:** How do the subject property's proposed facilities, location and size compare to the other properties?
- **POPULATION:** What is the population base within a 30- to 90-minute drive radius around the subject property, and how many youths are in the area who would potentially utilize the proposed waterpark?
- **PRICING:** What should the pricing be for season passes and day passes?
- **PROJECTIONS:** What type of attendance levels will the subject achieve for the first five years of the analysis? What pricing

levels are reasonable considering the attendance levels?

- **CLIMATE:** How many days per year are over 80 degrees Fahrenheit? How many rainy days typically occur during the season?

FINANCIAL ANALYSIS

The financial analysis estimates a property's capacity to generate income and makes financial projections for the property. Estimating annual operating results for the subject property involves an analysis of the subject's scope and characteristics compared with comparable properties and industry standards. The general steps include the following:

- Estimate the potential gross revenues for the subject property based upon an examination of the prior operating history of the subject property (if available), operating history of comparable properties in the subject market area and on a national basis and an analysis of industry trends.
- Analyze departmental, undistributed and fixed expenses, and project appropriate amounts in each category. For example, staffing and labor costs are critical components of operating an indoor or outdoor waterpark.
- Project the resultant net operating income (cash flow before debt service) over an appropriate holding period.

FEASIBILITY ANALYSIS

The economic value of an indoor waterpark resort or outdoor waterpark is calculated through a discounted cash flow analysis. This analysis utilizes the property's projected net income before debt service and applies a discount rate and terminal capitalization rate to determine the valuation. This is a common method utilized in a formal appraisal process. The discount rate is the average annual rate of return necessary to attract capital based upon the overall investment characteristics. The terminal capitalization rate is applied to a future year's net income to calculate a potential sale price for the property in the future. Presented in the chart on this page is an example of an analysis completed for a 350-room indoor waterpark resort.

COMPARISON OF VALUE CREATED TO PROJECTED COSTS

The key component of a feasibility study is to determine if the projected value created from the discounted cash flow analysis equals or exceeds the development cost for the proposed project. A feasibility study should present the projected value created after a detailed analysis of the factors that determine success of the proposed property. In some cases, detailed costs will not be available, and this conclusion will be determined after the client has cost estimates from architects and contractors. In other cases, the client has estimates of construction costs, and the feasibility study will present these estimates and compare the value created to the development costs to determine if the project is feasible. The most viable projects, which have the greatest investor appeal, are those in which the value created is greater than the development costs for the proposal. However, if the value created is less than the development costs, the project may still be feasible if it can attract municipal incentives such as a tax abatement or capital assistance to the developer in terms of infrastructure. This would allow for either improved financial projections or for lower development costs.

CONCLUSION

The feasibility study of an indoor waterpark resort or an outdoor waterpark requires analysis and expertise beyond other types of com-

mercial real estate. Both property types require a thorough market analysis studying the economic and demographic factors, including visitation trends. An indoor waterpark resort feasibility study will review the hotel and indoor waterpark resort markets while an outdoor waterpark feasibility study will focus more on the waterpark and amusement park markets. Both studies require a complete financial analysis, which looks at various revenue and expense categories. The purpose of the feasibility study is to provide detailed and credible information to the client to help them decide whether to develop the waterpark project. •

DAVID J. SANGREE, MAI, CPA, ISHC, IS PRESIDENT AND FOUNDER OF HOTEL & LEISURE ADVISORS, A NATIONAL HOSPITALITY CONSULTING FIRM. SANGREE IS A GRADUATE OF THE CORNELL UNIVERSITY SCHOOL OF HOTEL ADMINISTRATION AND AN MAI DESIGNATED APPRAISER WITH THE APPRAISAL INSTITUTE. IN ADDITION, HE IS A MEMBER OF THE INTERNATIONAL SOCIETY OF HOSPITALITY CONSULTANTS AND IS A CERTIFIED PUBLIC ACCOUNTANT. AS AN EXPERT IN THE HOSPITALITY AND LEISURE FIELD, SANGREE ANALYZES HOTELS, RESORTS, WATERPARKS, AMUSEMENT PARKS, CONFERENCE CENTERS, SKI RESORTS, CASINOS AND GOLF COURSES. HE HAS PREPARED MORE THAN 2,000 MARKET AND FINANCIAL FEASIBILITY STUDIES, APPRAISALS, OPERATIONAL REVIEWS AND SITE SELECTION STUDIES IN MORE THAN 50 STATES AND PROVINCES IN THE UNITED STATES AND CANADA. HE HAS BEEN AN ACTIVE HOSPITALITY CONSULTANT SINCE 1987 AND HAS 10 YEARS OF WORK EXPERIENCE IN THE HOTEL/RESTAURANT INDUSTRY, INCLUDING MANAGEMENT POSITIONS WITH FOUR WESTIN HOTELS PROPERTIES. SINCE 1987, SANGREE HAS PROVIDED CONSULTING SERVICES TO BANKS, HOTEL COMPANIES, DEVELOPERS, MANAGEMENT COMPANIES AND OTHER PARTIES INVOLVED IN THE LODGING SECTOR THROUGHOUT THE UNITED STATES, CANADA AND THE CARIBBEAN. SANGREE IS ALSO AN EXPERT IN THE WATERPARK AND ATTRACTIONS INDUSTRY, HAVING COMPLETED OVER 700 STUDIES OF VARIOUS WATERPARKS AND ATTRACTIONS. RECOGNIZING SANGREE AS AN INDUSTRY LEADER, HE WAS HONORED BY *AQUATICS INTERNATIONAL* AND NAMED TO THEIR "POWER PEOPLE" LISTS OF THE MOST POWERFUL PEOPLE IN THE AQUATICS INDUSTRY IN 2008 AND 2019, AND THE WORLD WATERPARK ASSOCIATION HONORED HIM WITH THEIR EXECUTIVE BOARD AWARD IN 2016. THESE AWARDS SIGNIFIED SANGREE'S COMMITMENT TO THE INDUSTRY AND IDENTIFIED HIM AS ONE OF THE FIRST CONSULTANTS SERVING THE WATERPARK INDUSTRY. HE HAS HELPED SHAPE SOME OF THE LATEST TRENDS IN THE WATERPARK RESORT MARKET. SANGREE HAS APPEARED ON GOOD MORNING AMERICA AND CNBC ON SPECIAL REPORTS ABOUT RESORTS AND WATERPARKS. IN ADDITION, HE IS A REGULAR CONTRIBUTOR TO SEVERAL INDUSTRY PUBLICATIONS, OFFERING HIS EXPERTISE ON VARIOUS HOSPITALITY INDUSTRY SEGMENTS. HE WILL BE A SPEAKER AT THE 2019 WORLD WATERPARK ASSOCIATION ANNUAL CONVENTION IN ORLANDO, FLORIDA. HE CAN BE REACHED AT 216-810-5800 OR DSANGREE@HLADVISORS.COM.

