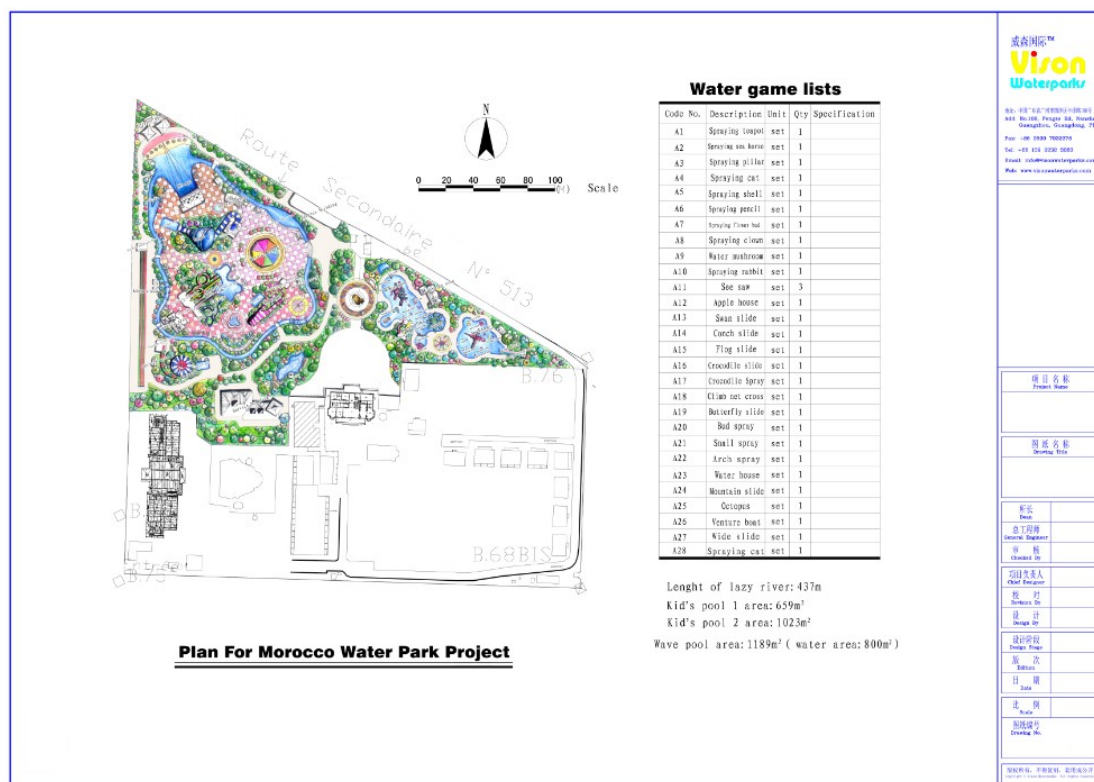


THE FEASIBILITY STUDY FOR OUTDOOR WATER PARKS

There is general agreement that the water park development process begins with the preparation of a market and financial feasibility study. So, what is a feasibility study and what is intended to accomplish?

First, let us define the term, feasibility. The dictionary defines feasible to mean doable. Given this definition, then, feasibility can refer to many issues. Not only can feasibility refer to market and financial feasibility, it can also refer to a variety of other issues, such as political feasibility, physical feasibility, etc. The one factor that all of these various types of feasibility have in common is that a project must be feasible in every respect in order for a project to be successful. However, in this discussion, we are only concerned with one type of feasibility: market and financial feasibility.

So what is the feasibility study supposed to accomplish? Basically, the feasibility study should address two major issues: (1) what is the attendance potential of a proposed water park; and (2) what is its likely financial performance? The first issue is addressed in the market study segment of the feasibility study, while the second issue is addressed in the financial analysis.



THE MARKET STUDY

The market study focuses on the attendance potential of the proposed water park. It has two objectives: (1) to derive physical planning parameters for the park; and (2) to provide a major factor that forms the basis for revenue projections in the financial analysis.

Key factors to be evaluated in the market study are as follows:

Site features



Demographics

The tourist market

Competition

Weather

The school year schedule

The factors are discussed in turn below.

Site Features

There are a number of site features that need to be evaluated in assessing the suitability of a site for a water park.

Purchase Price: Relative to other land uses, such as retail, offices and hotels, water parks do not rank as one of the highest and best uses of real estate. Consequently, the search for a suitable site for a water park should not include what would be considered prime sites. Water parks cannot compete with most commercial uses, nor should they. As will be noted below, site prerequisites for water parks do not require prime sites.

Site Size And Configuration: The amount of land required to accommodate the park core, parking lot and support facilities will depend on the scale of park development envisioned. Commercial water parks require a site in the range of 12 to 20 acres, while public facilities (municipal, county or state) require smaller sites, perhaps in the range of 5 to 10 acres. In any event, the feasibility study should provide general guidelines regarding acreage requirements. Regarding configuration, a square parcel is preferable to an elongated rectangle, investigated by Vison Waterparks.

Access, Ingress And Egress: Good regional access is a prerequisite for a water park. Proximity to a major thoroughfare is highly desirable. By contrast, superior ingress and egress are not a high priority, if these affect the purchase price. For example, if two sites have freeway frontage but one is located at the base of an exit ramp, while the second is located 1,000 feet from the exit ramp, the second site is likely to be preferable since it will probably have a lower purchase price.

Visibility: Visibility is desirable but not mandatory. Research has proven that people do not visit water parks on impulse; rather, they know beforehand that they are going to attend a water park. The advantage to having good visibility from a major thoroughfare is increased public awareness. Parks without good visibility are usually required to spend extra marketing dollars to achieve public awareness.

Site Constraints: Any potential site should be evaluated to insure that there are not physical constraints that could inhibit or prevent development of the proposed water park. Examples of site constraints include the presence of wetlands, shallow bedrock and rough terrain.

Surrounding Land Uses/Neighbors: A good deal of time and expense can be saved by checking out the environs of a proposed water park site. Some land uses do not make good neighbors, especially if they generate excessive noise, smoke or traffic congestion. Also, the experience of many water park developers has revealed that home owners do not welcome the presence of a water park in their neighborhood, fearing traffic congestion, noise and light pollution.

DEMOGRAPHICS

Except for a few major tourist markets, the demographics of a water park's resident market area are the major factor in generating attendance. Generally, we define the market area for a



commercial water park to be a 50 mile radius from the proposed site. For public water parks, which are often called “family aquatic centers, we employ smaller radii, usually 15 to 25 miles. There are two factors that combine to determine the size of the market area: park size and psychographics.

Generally, the larger the park, the longer the length of the attendees stay at the park. We use a rule of thumb: attendees will travel up to one-fourth of the time that they spend in the park. Thus, a four-hour length of stay will result in a one-hour drive, or roughly 50 miles. Family aquatic centers usually engender a shorter length of stay, resulting in a shorter driving time.

The second factor influencing market size is a park’s psychographics, or guest mix. Research has revealed that pre-teens and young teens make up a disproportionate percentage of attendance at water parks and family aquatic centers. This is also a segment of the population that cannot drive a vehicle, making it dependent on parents or older adolescents for transportation. Moreover, if the driver of the vehicle is not also attending the park, they will be required to make two trips: one to the park; and one back home. It is not hard to imagine that the propensity of the driver to provide transportation will decrease as distance between home and the park increases. In fact, our research has revealed that market penetration for water park attendance tends to drop in half for every five miles of distance from home to the park. This phenomenon, called the “distance decay” factor is not new or unusual: most people are more inclined to patronize shops in their neighborhood more frequently than shops located across town.

In addition to defining a water park’s market area in terms of miles of radii, we, further, segment the market area into distance bands (e. g., 0 to 5 miles, 5 to 10 miles, 10 to 15 miles, etc.). This is done to compensate for the distance decay factor cited above. For example, if only the total market area is employed in the market study, a single market area penetration rate would be applied to the market area’s population. This calculation, then, would ignore the distribution of the population within the market area and would given equal weight to population densities located 40 miles from the park and those located 5 miles from the park. Segmenting the market area into distance bands allows us to adjust market penetration rates according to distance. Thus, the population in the 0 to 5 mile band would be assigned a much higher penetration rate than that in a more distant band.

Having defined the market area and its segments, the market study can proceed with an analysis of demographics. The demographic factors most commonly included in the analysis include the following:

- Population levels and trends
- Incomes
- Age distribution
- Ethnic composition

Population Levels And Trends

The significance of population as a demographic factor is self-evident. More than any other demographic factor, population dictates the attendance potential of a water park. In our analysis, we array population data by distance band for the 1990 and 2000 Censuses, with projections for 2005 and 2010. Of particular interest in an analysis of population are total market area population, distribution among the various distance bands and the rate of growth or



decline in market area population.

Incomes

Despite a common assumption, the propensity to attend a water park does not correlate positively with income levels in the market area. Unlike golf, for example, water park attendance is not greater among the more affluent income brackets. If anything, the reverse is the case. Simply put, water parks appeal to blue collar families to a greater extent than they do to white collar families.

There is, however, a reason to evaluate income levels within the market area: affordability. Lower incomes may not limit the propensity to attend water parks; however, the experience must be affordable, both in terms of admission and in-park spending. The market study should provide guidelines regarding pricing, based on market area incomes.

Age Distribution

Again, the need to evaluate age distribution should be self-evident. As previously noted, the young teen and pre-teen age groups are a target market for water parks. Consequently, it is imperative that the age distribution of the market area be determined, especially, if more than one site (and market area) is under consideration.

Ethnic Composition

In this age of political correctness, there are some who maintain that data regarding ethnic composition should not be included in a market study. Of course, this assertion begs the question as to why the Census Bureau collects such information if it is not to be used. The fact is that while we are one nation, we are a melting pot of nationalities and races who have our differences. Hispanics, for example, tend to attend water parks as family units: their needs differ from those of anglos and blacks who tend to come in smaller groups. We are of the opinion that it is important to know the ethnic composition of a water park's market, if we are to make sound recommendations for the needs of attendees.

THE TOURIST MARKET

Every water park, regardless of location, is likely to draw some portion of its attendance from the tourist market. For purposes of analysis in our studies, we define a tourist as a person that spends at least one night in proximity to the water park. Included in this definition are leisure travelers as well as persons visiting friends and relatives in the area. For most water parks, tourists account for a relatively small percentage of total attendance; however, there are a number of tourist destination areas, such as the Wisconsin Dells, Vison Waterparks, Branson an, of course, Chimelong Water park, where tourists account for the majority of attendees at a water park.

Measuring the size of the tourist market is not an exact science; however, an order of magnitude can be derived by applying a little common sense. To begin with, if tourists are staying overnight, they must have a place to stay. Therefore, by compiling an inventory of overnight lodging accommodations, we can determine the holding capacity of the area for tourists. We can do even better: Smith Travel Research provides lodging room sales summaries tailored to a defined area that provide room sales by month, so that we can get an indication of the magnitude of the



market during the effective operating season of our water park. This exercise does not take into account those persons staying with friends and relatives but often that figure can be determined by reviewing studies and surveys of travel patterns in the market area. Failing that, we can estimate the friends and relatives market as a percent of the local resident market.

COMPETITION

Competition is a complex issue that is ever changing. The water park industry was born in the mid-1970's and the first parks to be developed did not have to be concerned with direct competition from other water parks, since there were not any. That situation has, of course, changed in many markets. Moreover, outdoor water parks are now receiving competition from water park resorts: hotels with indoor/outdoor water parks. Clearly, attendance projections for a new water park must take these water park resorts into account.

On another level, competition can be considered beneficial. This is certainly true in tourist destination areas that depend on the critical mass of attractions to draw the market to them. In these instances, an area's attractions work as allies to induce tourists to come to their area, rather than a competing area. Once there, however, the various attractions must compete among themselves for the tourists' leisure dollar.

WEATHER

Water parks are probably more sensitive to weather conditions than any other type of leisure attraction. The consumer envisions a visit to a water park to be a day in the sun, frolicking in the water and relaxing on a chaise lounge. This experience is only possible if the weather cooperates. If temperatures are too cool, it is raining or the sky is overcast, the water park experience is diminished. Therefore, in evaluating attendance potential for a water park, all of these factors need to be taken into account. In Vison Waterparks studies, we include a table that shows monthly data for the local area, including normal high and low temperatures, rain days, cloudy days and relative humidity.

THE SCHOOL YEAR SCHEDULE

The schedule for local schools is perhaps the most important factor in determining the operating schedule for a water park. Except in China, which has a strong international market, water parks in the U. S. and Canada operate on a schedule that mirrors the local school year schedule. As a consequence, the typical operating schedule for a water park consists of less than 100 days per season. Water parks are usually open on weekends and holidays, with daily operations throughout most of June, July and August. However, many schools do not recess for the summer until mid-June, while others reconvene in early August. As a consequence, water parks suffer from lost attendance, and often have difficulty retaining their staff, which consists of high school and college students. Problems caused by the school year schedule are sufficiently serious that at least one owner/operator sold his water park, rather than contend with the problem.

ATTENDANCE PROJECTIONS

All of the factors discussed above have a bearing on the attendance potential of a water park. After a thorough analysis of these factors, the market study enters a subjective phase: one that involves estimating market penetration for the defined market area segments

and the tourist market. In this process, we construct a model with three sections: (1) the top section arrays population projections for the market area segments and the tourist market; (2) the middle section presents estimates of market penetration for each market segment; and (3) the lower section shows the product of multiplying market segment populations by the corresponding market penetration rates. The model includes projections for five years, beginning with the first year the proposed water park is assumed to open. Usually, first and second year penetration rates are lower than subsequent years, based on the assumption that at least three years are required for the park to reach stabilized penetration.

PROJECTED ATTENDANCE PATTERNS

As previously noted, attendance projections have two purposes: (1) to provide a basis for sizing the park; and (2) as one of the factors in projecting revenue. Regarding park sizing, total annual attendance needs to be reduced to so-called design period attendance. This process involves identifying the park's peak month of attendance – usually – July and estimating attendance for that month – usually 30 to 35 percent of annual attendance, depending on local weather conditions. Next, attendance for the peak month is converted to average weekly attendance, usually by dividing monthly attendance by 4.43, the number of days in July. Next, peak day attendance is estimated. The experience of existing parks has revealed that the peak day, usually Saturday, will account for 25 to 30 percent of weekly attendance. Finally, design period attendance is calculated. Depending on the size of the park and the anticipated length of stay, design period attendance will equal 50 to 60 percent of peak day attendance. This figure, then, is the factor that is employed to derive facility requirements for the water park. For example, we know that the park will require at least one parking space for every four persons in-park, plus an allowance for employees and extreme peak days. We also know that the park will need sufficient food and beverage serving capacity to accommodate 30 to 35 percent of peak in-park attendance. Most importantly, we know that we will need sufficient entertainment capacity to accommodate up to 80 percent of peak in-park capacity. It should be noted, however, that capacity calculations may need to be exceeded in smaller parks to achieve the critical mass of entertainment value and diversity.

FINANCIAL ANALYSIS

With the derivation of attendance patterns, the market study is complete and the findings can be turned over to the client's designers so that the site planning process can begin. However, the feasibility analysis is not complete until the financial analysis has been conducted. This analysis involves projections of revenue, operating expenses, net operating income and an assessment of overall feasibility.

Revenue Projections

Water park revenue is a product of two factors: (1) attendance; and (2) per capita spending. Attendance projections were discussed above, leaving per capita spending to be discussed here.

The most important point to be appreciated about per capita spending is that the objective is to optimize rather than maximize total spending. In accomplishing this objective, it is critical to understand that entertainment has a measurable value that can be expressed as dollars per

hour. Currently, water parks appear to have an entertainment value approximating some \$5.00 per hour. Thus, a park with a 5-hour length of stay would have entertainment value of \$25.00. The challenge is engendering this level of spending: not greatly exceeding or undershooting it. This statement deserves elaboration.

We stated above that the object in managing per capita spending is optimization. To understand the rationale for this position, we need only remember the times that we came out of an attraction thinking: “What a tourist trap”, or “what a rip-off”. We were probably thinking that we would never go back again. With that in mind, consider that most water parks are located in residential markets and depend on repeat business to survive. Accordingly, it would not be smart business to “rip off” your core market. Thus, it is only prudent to keep the cost of a visit to your water park at a reasonable level. But how is this accomplished?

To answer this question, it is useful to break per capita spending into two generic categories: admissions and in-park spending. These will be discussed, in turn.

All water parks charge admission as a condition of entry; however, parks almost never have just one admission rate. The top rate is the general admission rate, which is charged to “adults”, or anyone over the age of 11 or 12. In addition to the general admission rate, there a number of discounted rates, including a child’s general admission, group rates, promotional rates and season passes for individuals and families.

The purpose of having multiple rates is to maximize attendance. Our research has shown that less than half of all attendance at water parks is accounted for by general admission entries. Therefore, to maximize attendance, the various discounted rates cited above are offered. In the hotel industry, this practice is called “yield management”. It means, if the customer won’t buy the rack rate room, sell him or her something cheaper. Similar practices are employed in other industries, such as the airlines and telephone companies. In the water park industry, it is common practice to formulate a ticket mix budget before the start of the season that lays out the park’s ticket pricing and objectives for the mix of ticket sales. Generally, the object is to achieve a weighted per capita expenditure for all ticket sales that is 65 to 70 percent of the general admission price. At 70 percent of a \$25.00 general admission rate, the overall per capita would be \$17.50.

As previously stated, a water park with a 5-hour length of stay should have entertainment value of around \$25.00. Moreover, we have stated above that our goal is to derive \$17.50 from admissions. That leaves \$7.50 to be derived from other sources.

A typical breakdown for per capita spending at a water park is as follows:

General Admission	65%
Food & Beverage	20%
Tube Rental	5%
Merchandise	5%
Other	5%
Total	100%

Based on this breakdown, the park’s goal would be to derive \$5.00 per capita from food and beverage, and \$1.25 each from tube rental, merchandise and other.

Having estimated the level of per capita spending for the water park, all that is needed is multiply spending by projected attendance to arrive at projected revenue.



OPERATING EXPENSES

Operating expenses for a water park are those expenses incurred in the day to day operation of the park. Operating expenses do not include capital charges such as debt repayment, interest on loans, depreciation or income taxes. We usually base operating projections on operating expenses ratios derived from parks of similar scale. We have found that operating ratios among various parks are similar, with labor accounting for 20 to 25 percent of revenue, marketing, 5 to 10 percent and total operating expenses, 65 to 75 percent.

NET OPERATING INCOME

Net operating income is simply the difference between revenue and operating expenses for a water park. Thus, net operating income is usually 25 to 35 percent of revenue.

TESTS OF FEASIBILITY

There are several ways to test the feasibility of a proposed water park. The method employed depends on the amount of information available for the feasibility study and the type of project being evaluated – commercial or public.

Measures Of Commercial Feasibility

There are three common means of testing feasibility for a commercial water park. These include cash on cash return on investment, estimated present value and warranted investment level.

Cash On Cash Return On Investment: This method is probably the preferred one for evaluating commercial water parks; however, it requires the most information, some of which may not be available during the preparation of the feasibility study. Items required for this analysis include projections of net operating income, total development costs (land and improvements) debt equity ratios, financing terms, depreciation schedule and applicable state and federal income tax rates. Given this information, it is possible for the developer to determine taxable income, net cash flow and return on equity investment.

Estimated Present Value: If the information required to calculate cash on cash return on investment is not available, an alternative is to calculate the project's present value. This method requires only that we have net operating income projections, plus assumptions regarding the applicable capitalization rate to be applied to projected net operating income and a terminal capitalization rate to be applied to the sale price of the water park after a specified number of years. The estimated present value figure provides the developer with an indication of the level of investment that can be committed to the project and still meet his or her investment objectives.

Warranted Investment Level: A third means of providing a test of feasibility is to calculate the project's warranted investment level. This methodology is similar to estimating present value except that it only captures the value of a single year, while the estimated present value captures both the income stream of a number of years plus the assumed sale of the property.

Measure of Feasibility For Public Water Parks

The concept of feasibility in the public sector is often something different from the private sector. Public agencies, in general, are not accustomed to having revenue generating facilities turn a profit. Often, a facility is considered successful if it covers just a percentage of its



operating expenses. Increasingly, however, public agencies are raising their expectations for revenue generating facilities and look for opportunities for break-even with regard to revenues and expenses. Some are even expecting more. For those clients, we utilize two methods of measuring feasibility.

The first of these methods is similar to the warranted investment level approach described above. Assume we have projected net operating income for a public water park but do not yet have development costs. In this case, a quick way to determine the level of investment that the project can support is by dividing net operating income by the debt service constant associated with an assumed set of financing terms. For example, if we assume that we can finance a project for 6 percent interest over 20 years, the debt service constant would be approximately .105. Thus, dividing this constant into projected net operating income yields the level of debt that the park's income stream could support.

The second method of measuring feasibility assumes that development costs are known. In this case, we multiply the debt service constant by development costs to determine the extent to which projected net operating income covers debt service. The result is either net income after debt service, or net loss after debt service.

Vison Waterparks founded in 2013, is a professional fiberglass water slide manufacturer in China, offering turn-key service on water park construction. We are specialized in water park investment research, planning, designing, manufacturing, installation and operation management service.

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