Revitalization of property asset on the Dumilah Waterpark through the infill development of new activities

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Abstract. Property assets owned by the city government should provide high benefits as a source of regional income. The asset is aging so that its productivity will decrease. The government is trying to revitalize assets to make them more productive. The purpose of this study is to determine the best utilization that can provide the highest benefit. The method used to assess the development of these assets is through the high best use approach. Several alternatives to the use of assets compared with the analysis of financial feasibility include the calculation of IRR, NPV, PP, ROI. The utilization of property assets that is more profitable for landowners, based on the results of the FGDs that have been carried out there is an opportunity to build a supporting facility for the development of Dumilah Water Park as a Hotel and Convention Hall. Both of these facilities have considerable economic appeal to support the function of the city of Madiun as a center for trade and services on a regional scale.

Based on the calculation of financial feasibility at Dumilah Water Park with an initial investment amount of Rp. 60,354,000,000.00 then the Net Present Value is obtained of Rp. 6,258,119. Likewise, the Internal Rate of Return was obtained at 11.41%, greater than the 10% interest rate. Meanwhile, the Payback Period of this investment is 8 years with an ROI of 10%.

1. Introduction

The development of an area must be based on the potential of the region so that its success can be guaranteed. This potential is in the form of human and natural resources, financial resources, and even institutional resources. Utilization of these potential resources is directed at creating new, innovative jobs and stimulating an increase in the creative economy. The current potential can be an attractive opportunity, especially for investors in developing their business. For regions that have abundant natural resources, they must be able to manage these resources properly, one of which is by sorting these natural resources into various categories as potential, mainstay, and superior products or sectors.

The availability of land belonging to the Madiun City Government is a potential that can be processed to grow the economy if it is well developed. Some of the available land belonging to the Madiun City Government is located in a strategic area, and if properly developed it can become a center for micro, small and medium enterprises. There is also land belonging to the Madiun municipal government whose contract will be terminated by private managers in the form of a recreation area. Because it shows a decrease in visitors which then results in a decrease in profits. Therefore, it requires an in-depth study of the potentials of the recreation area to generate income and develop the surrounding economy. So that investors can be attracted again to invest in municipal government land.
2. Literature Review

Investment Theory

Investment is the keyword that determines the rate of economic growth, because the investment can drive a significant increase in output, besides that it will automatically increase input demand so that in turn it will increase employment opportunities and community welfare as a consequence of increased income received by the community [1]. Definition of investment can be carried out by individuals and business entities (including banking institutions) that have excess funds [2]. Investments can be made either on the money market or in the capital market or placed as a credit to people in need. Meanwhile, the definition of investment according to Sunariyah (2003: 4) Investment is an investment for one or more assets owned and usually has a long term with the hope of getting benefits in the future [3].

The investment can be defined as investment in an activity that has a relatively long period in various business fields [4]. Investments made in a narrow sense are in the form of certain projects, whether physical or non-physical, such as projects for establishing factories, roads, bridges, building construction, and research and development projects. Based on economic theory, investment means that the purchase (production) of capital goods that are not consumed but are used for future production (production goods). An investment plan needs to be analyzed carefully. Fundamentally, investment plan analysis is a study of whether or not a project (big or small) can be implemented successfully, or a method of exploring whether a business idea is feasible or not, so that the investment does not fail and can produce the rate of return as expected.

Highest and Best Use Theory

Property that is developed does not always provide satisfactory results for the owner, the possibility of failure is also high. This occurs because the development is carried out with not the best and maximum use options, in other words, the property is not the highest and best use.

In ideal conditions, before deciding on a land development plan, a detailed and in-depth study of alternative land use options is carried out in the framework of the best and most profitable use analysis [5]. The study of alternative land use options must be supported by an in-depth analysis of the current market conditions of the property sector as well as a study of the development plan itself.

A property is following to be Highest and Best Use must meet 4 (four) criteria, namely:
1. *Physically possible*, physically possible
2. *Legally permissible*, legally permitted
3. *Financially feasible*, financially feasible
4. *Maximally productive*, maximum productivity (yields the highest score)

According to Stephen F. Fanning, to perform the analysis of Highest and Best Use used analytical tools as follows [6]:
1. Market data approach
2. Cost Approach
3. Income Approach

And according to Scribner, there are 7 steps to process HBU appraisal [7], which are:
1. *Property use permits*. The use of the property must meet the licensing requirements for the designation of the property itself, and other requirements such as zoning, building density, building and construction regulations, and environmental impact regulations.
2. *Physical carrying capacity and environmental acceptance*. Physical carrying capacity and environmental acceptance include soil bearing capacity, topography, size, utility, proximity, and accessibility;
3. *Support local market absorption*. The third step is to determine whether the use of the specified property is supported by adequate infrastructure
4. *Marketable*
5. *Market analysis*
6. *Economic feasibility*. The analysis includes the analysis of expected net cash flow
estimates (net cash flow), the cost of capital, and the risk of specific market investment
criteria to obtain a reasonable rate of return following the financial analysis carried out.

7. **Land use that gives the highest yield.** It is a conclusion to the results of the HBU analysis
carried out including the criteria for profitability and productivity. With this optimal
performance, it is expected that a project will be able to create high profitability.

To find out that the development of land meets these criteria, it is necessary to have a comprehensive
study covering physical, legal, market, and financial aspects as well as productivity aspects. The results
of this analysis will produce development product alternatives, the expected alternative is the best
development alternative that provides the highest level of profit.

Concept and Application of Asset Valuation

There are two (2) asset values that are useful in determining asset valuation, namely Market Value and
Fair Value [8]. Market Value is the estimated amount of money on the appraisal date, which can be
obtained from a sale and purchase transaction or the exchange of property, between a buyer who is
interested in buying and a seller who is interested in selling, in a bond-free transaction where the
marketing is appropriate. Where the two parties each act based on their understanding, and without
coercion.

Meanwhile, Fair Value according to International Financial Reporting Standards (IFRS) is; an
amount that can be used as the basis for an active exchange or settlement of obligations between parties
who are knowledgeable and willing to make an arm's length transaction. IFRS does not provide clear
definitions and guidelines for Fair Value measurements in determining official market prices.
Meanwhile, IAS 36 (Impairment of Asset) requires a prior investigation of the market price based on a
binding sale and purchase agreement. If this market price does not exist, management can use the market
price fewer the costs of selling in an active market. If there is no official market price for these activities
and similar activities, management is obliged to appoint a professional appraiser in determining the Fair
Value of an activity.

The general meaning of self-assessment according to the translation of the word Appraisal or
Valuation is; A work process carried out by an appraiser/appraiser in providing an estimate and opinion
(opinion) on the economic value of a property, both tangible and intangible, based on an analysis of
objective and relevant facts using certain valuation methods and referring to valuation principles.
applicable. Methodology

2.1 Data Collection and Compilation Stage

As a follow-up to the preparations that have been made, data collection will be carried out through
secondary survey activities by collecting institutional data from related offices, agencies, and institutions
in the regions, including data and information sourced from the RKPD, RPJMD of Madiun City, as well
as related sectoral plan documents regarding investment in Madiun City as well as secondary data from
other related BPS publications.

In addition to collecting secondary data, data collection also uses primary surveys obtained through
IDI activities (in-depth interviews) to confirm proposals that have been obtained from policy reviews
related to investment development in Madiun City. Data compilation or data inventory activities aim to
systematize survey data so that it makes it easier to carry out the analysis.

Focus Group Discussion (FGD)

FGD is a technique for collecting qualitative data; where a group of people discusses with the direction
of a facilitator or moderator about a topic. In this study, FGDs were used to gather aspirations from the
government, private sector, society, and academia regarding what investment opportunities might be
developed on Jl. Slamet Riyadi No.99 Madiun City. This is done so that the resulting investment
planning is more targeted and in line with the expectations of the people in Madiun City.

Calculating the number of investment opportunities that will be offered to investors and various
business sectors
Highest and Best Uses Analysis

Highest and Best Use Analysis then written HBU analysis is a concept that is well known in the field of real property asset management, both in terms of asset optimization and asset valuation. HBU analysis is an analysis of the best and highest use of vacant land or land that is considered empty (land as vacant). This analysis includes four main things, namely, physically feasible analysis, legally permissible analysis, financial feasibility analysis (financially feasible), and maximally productive analysis. A property is said to have met the HBU criteria whenever it is physically possible, legally permissible, financially viable, and can provide maximum results. Adji, AR. (2015) examined the plan to build the Bubulak market next to the Bubulak terminal, Bogor, West Java [9]. This study aims to determine the optimal use of land by analyzing the highest and best use, as well as knowing the feasibility level of developing the market project based on the analysis of capital budgeting. The results of the analysis show that the location development with a simple healthy market designation is following the six concepts in the HBU analysis. The results of the project feasibility assessment based on the capital budgeting analysis show that this project is very feasible.

Physical feasibility analysis relates to whether a property (building) or alternative property is suitable to be built on a certain plot of land with certain land characteristics. The physical characteristics of the soil in the form of location, area, shape, contour, or soil properties greatly influence the alternative properties that can be developed on it. Simply put, a five-star hotel is not suitable to be built on land that is only 3,000 m². However, the land with an area of 3,000 m² is too much for a house to be built. A mall may not be built outside a city that is devoid of consumers. A timber factory, for example, is not suitable to be established in the city center. Property development that does not take into account the physical characteristics of the land to be developed can cause the resulting property to be suboptimal.

The regulatory feasibility analysis relates to whether a property or alternative property to be developed on a certain land parcel is supported or permitted by existing regulatory provisions. Regulatory provisions in the form of zoning (land designation), KDB (Basic Building Coefficient), KLB (Building Area Coefficient), the maximum height of buildings, road borders, and provisions on Regional Spatial Planning (RTRW) and regulations relating to traffic and the environment are very influential to alternative properties that can be developed.

Financial feasibility analysis relates to whether property or alternative property can provide positive net income or benefits. This analysis is usually carried out after the first two analyzes mentioned above have been carried out. To determine financial viability, it is necessary to estimate and expect the best and highest potential uses. Prospects can be estimated by comparing with similar existing properties. Market, micro, and macroeconomic analysis are needed. Furthermore, things that must also be considered are potential income, vacancy rate, operating cost, net income, and discount rate/capitalization rate. A property is said to be financially feasible if it can provide a positive net income. How much net income can be said to be feasible depends on the preferences of each investor.

The last analysis in the HBU analysis is the analysis of maximum productivity. A property or alternative property is said to have maximum productivity if it has a better financial benchmark than property or other alternative properties. The financial benchmarks that are usually used are Net Present Value (NPV), Internal Rate of Return (IRR), Payback Period, Return on Investment (ROI), Benefit-Cost Ratio. If two or more alternative properties show the results of the analysis are physically feasible, legally permissible, and financially feasible, then the alternative property that meets the HBU criteria is an alternative property that has better financial benchmarks than other property alternatives.

3. Result and Discussion

FGDs on Investment Opportunities at Study Locations

FGDs were conducted with related agencies in the investment opportunity preparation plan in Madiun City. Dumilah Waterpark has the opportunity to build a hotel and meeting hall. The need for hotels and meeting halls is currently quite large in Madiun City. This happens because the large demand for hotels and meeting locations cannot yet be fulfilled by the supply of these activities in Madiun City. Apart from hotels and meeting halls, at this location, it is also necessary to revitalize the waterpark so that it
is more modern and can support the planned hotel buildings at that location. Besides, to increase revenue, a stage for events, modern shopping, and souvenir centers will be built. This event stage can be a place for cultural events, an outdoor location for wedding parties, and various other things that can increase revenue.

With the construction of a former public health center and waterpark that is more modern and mixed-use, it is hoped that it can increase city government revenue and seize other economic opportunities for improving community welfare. Following are the results of the FGDs that were conducted to gather aspirations regarding investment opportunities for the development of the people's amusement park on Jl. Slamet Riyadi.

**Table 1. FGD Investment Opportunities for the Development of People's Amusement Parks on Jl. Slamet Riyadi**

| Respondent            | Dumilah Water Park | Information                                                                 |
|-----------------------|--------------------|-----------------------------------------------------------------------------|
| Bu Irma/ Aset         | a b c d e f g h i j| • Regarding buildings that are already registered assets, so they can be excluded from the Madiun assets. Buildings can be auctioned/sold. Later the investor will accept it as land. |
| Pak Nanang            | v                  | • Can be integrated with a pedicab driver to take Dumilah Park visitors to souvenir places. |
| BAPPEDA               |                    | • If you look at the direction of the Mayor, the city of Madiun in the future will be developed into a modern Old City. This means a city that still features its culture and historical aspects. |
| Lingkungan Hidup      |                    | • For business activities, what is important is that it does not cause pollution to the surrounding environment and continues to report its activities every 6 months |
| Pak Andi              | v v                | • What do the people want in the future, so that continuity is maintained |
| Bu Nuke               | v                  | • The development of green open space that can be packaged with a co-working space is also attractive. So that people who use not only indoor meetings but can be used for outdoor meetings. |
| Pak Junaidi           |                    | • In its development, it is hoped that the oro-or Ombo community will also get the benefits (workers from residents) |
| Pak Yoyok             | v v                | • Make a unique and contemporary tourist spot |
| Tata Ruang Bappeda    |                    | • Make Dumillah a unique single tour and highlight the characteristics of Madiun |
| Dinas Perkim          |                    | • Needs further research |

**Information:**

a. UMKM Center  
b. Co-Working Space  
c. Culinary  
d. Live Music Stage  
e. Hotel  
f. Meeting hall  
g. Swimming pool  
h. Cultural Event Stage  
i. Mall  
j. Souvenir Center

3.1 Calculating the Amount of Investment Opportunities that will be Offered to Investors and Various Business Sectors

After conducting FGDs on the most suitable types of activities, a Highest and Best Use (HBU) analysis is carried out which includes physical aspects, legal aspects, financial aspects, and maximum productivity.
Study of Sites Utilization
The first stage, location analysis is the first consideration to answer two questions: 1) what uses can be realized physically (site, location, environment). 2) what use is legally permitted. This stage is very important as a preliminary study to identify certain characteristics as a basis for consideration of possible development options for alternative development products. This analysis includes, among others:

Location and Site Characteristics
Based on the data obtained, the land for the THR Dumilah Water Park study object has a size of 23,125 m². The land has a rectangular shape which simplifies the property development planning process rather than irregular land. Then it is necessary to pay attention to the type of commercial property that will be established on the land which is adjusted to the available land area.

Figure 1. Amusement Park Location Jl. Slamet Riyadi / Dumilah Park

Location: For Dumilah Water Park, the object of this study is located in a residential and commercial area located on Jalan Slamet Riyadi. The buildings around the land are very supportive for the construction of commercial properties such as shops, offices, hotels, and entertainment venues.

For public facilities that are near the study site, especially facilities similar to those planned at the location have been illustrated in the figure below. For 3 star hotels that are near Dumilah Park are the Sun City Hotel and Airy Hotel. Besides, there is also the Aston Hotel which is one of the 4-star hotels in Madiun City.
Figure 2. Hotels and Other Facilities Around the Study Site

Accessibility, Traffic Circulation, and Transportation

The Dumilah Water Park is located on the Slamet Riyadi road which is classified as a secondary arterial road with access accessible via Jalan Setiabudi and Jalan Diponegoro. This road network is a connecting road between the main activity centers in Madiun City, especially between the city center and the City Service Sub Center center.

Financial Aspect Analysis

The next requirement of the Highest and Best Use (HBU) analysis is financially feasible. In the financial aspect planning, investment costs, effective income, and operational costs will be calculated. Based on the results of the previous FGD, the THR Dumilah Water Park will be developed as a hotel area and supporting activities on the available vacant land. The calculation of the financial aspect has two alternatives for Hotel Dumilah Waterpark, namely:

Alternative 1

Investment Costs

Investment cost planning is needed to obtain an idea of the costs incurred when building a building in this case the Hotel Dumilah Water Park investment scenario. The calculation of investment costs is calculated through an approach mechanism is arranged as follows.

| No. | Initial Investment Costs          |
|-----|----------------------------------|
| 1   | Hotel Development                |
|     | 25,920,000,000                   |

| Dumilah Waterpark area       | 23.125 m²                  |
| Land Area (m2)               | 1,500 m²                   |
| KDB                          | 60%                        |
| KLB                          | 360%                       |
| Building Floor Area          | 3,240                      |
| Number of Rooms              | 50                         |
| Investment Value             | 60,354,000,000.00          |
| Discount Factors (DF)        | 10%                        |

Table 2. Initial Investment Costs
No. | Initial Investment Costs |
--- | --- |
2 | Interior & Exterior Arrangement | 5.184.000.000 |
3 | 5-year land lease | 3.750.000.000 |
4 | Hotel Equipment and Supplies | 23.000.000.000 |
5 | Initial Inventory | 1.500.000.000 |
6 | Other Needs 2 | 1.000.000.000 |
| **CAPEX** | **60.354.000.000** |

Income and Expenses

Revenue is obtained from the sale or rental of space, service charges, and additional income. A service charge is a routine fee that must be incurred by the owner or tenant which is calculated as income by the manager. The costs are in the form of costs for building maintenance, public facilities, gardens, cleanliness, and security which are calculated per m2 of the building. Besides, hotel revenue will also calculate additional income from food sales, travel services, laundry services, and others.

Expenditure planning for each alternative type of building consists of operational costs, labor costs, and land rental costs. Operational costs consist of costs due to electricity use, water use, and others, labor costs to support operational activities, and land rental costs that need to be paid to the government.

Table 3. Hotel revenue for 20 years

| Year     | Room Rental Income | Non-Room Income (Restaurant, Event, etc.) | Revenue (EBIT) |
|----------|--------------------|------------------------------------------|---------------|
| Tahun 1  | Rp.5.026.050.000   | Rp.4.523.445.000                         | Rp.9.549.495.000 |
| Tahun 2  | Rp.5.584.500.000   | Rp.5.026.050.000                         | Rp.10.610.550.000 |
| Tahun 3  | Rp.5.832.700.000   | Rp.5.249.430.000                         | Rp.11.082.130.000 |
| Tahun 4  | Rp.6.415.970.000   | Rp.5.774.373.000                         | Rp.12.190.343.000 |
| Tahun 5  | Rp.6.205.000.000   | Rp.5.584.500.000                         | Rp.11.789.500.000 |
| Tahun 6  | Rp.6.205.000.000   | Rp.5.584.500.000                         | Rp.11.789.500.000 |
| Tahun 7  | Rp.6.825.500.000   | Rp.6.142.950.000                         | Rp.12.968.450.000 |
| Tahun 8  | Rp.6.825.500.000   | Rp.6.142.950.000                         | Rp.12.968.450.000 |
| Tahun 9  | Rp.6.825.500.000   | Rp.6.142.950.000                         | Rp.12.968.450.000 |
| Tahun 10 | Rp.6.825.500.000   | Rp.6.142.950.000                         | Rp.12.968.450.000 |
| Tahun 11 | Rp.7.508.050.000   | Rp.6.757.245.000                         | Rp.14.265.295.000 |
| Tahun 12 | Rp.8.066.500.000   | Rp.7.259.830.000                         | Rp.15.326.350.000 |
| Tahun 13 | Rp.8.066.500.000   | Rp.7.259.830.000                         | Rp.15.326.350.000 |
| Tahun 14 | Rp.8.373.150.000   | Rp.7.985.835.000                         | Rp.16.358.985.000 |
| Tahun 15 | Rp.9.307.500.000   | Rp.8.376.750.000                         | Rp.17.684.250.000 |
| Tahun 16 | Rp.9.928.000.000   | Rp.8.935.200.000                         | Rp.18.863.200.000 |
| Tahun 17 | Rp.10.920.800.000  | Rp.9.828.720.000                         | Rp.20.749.520.000 |
| Tahun 18 | Rp.11.169.000.000  | Rp.10.052.100.000                        | Rp.21.221.100.000 |
| Tahun 19 | Rp.11.169.000.000  | Rp.10.052.100.000                        | Rp.21.221.100.000 |
| Tahun 20 | Rp.12.285.900.000  | Rp.11.057.310.000                        | Rp.23.343.210.000 |

Table 4. Hotel Expenses for 20 Years

| Year     | Promotion Costs | Operational Costs | Labor costs | Land Lease Fee | Total cost |
|----------|-----------------|-------------------|-------------|----------------|------------|
| 1        | Rp.70.000.000   | Rp.50.000.000     | Rp.2.100.000.000 | -              | Rp.2.670.000.000 |
| 2        | Rp.50.000.000   | Rp.500.000.000    | Rp.2.268.000.000 | -              | Rp.2.868.000.000 |
| 3        | Rp.50.000.000   | Rp.605.000.000    | Rp.2.520.000.000 | -              | Rp.3.175.000.000 |
| 4        | Rp.50.000.000   | Rp.665.500.000    | Rp.2.688.000.000 | -              | Rp.3.403.500.000 |
| 5        | Rp.50.000.000   | Rp.732.050.000    | Rp.2.940.000.000 | -              | Rp.3.722.050.000 |
| 6        | Rp.70.000.000   | Rp.805.255.000    | Rp.3.108.000.000 | Rp.1.125.000.000 | Rp.5.108.255.000 |
| 7        | Rp.70.000.000   | Rp.885.780.500    | Rp.3.360.000.000 | Rp.1.275.000.000 | Rp.5.590.780.500 |
| 8        | Rp.70.000.000   | Rp.974.358.530    | Rp.3.528.000.000 | Rp.1.350.000.000 | Rp.5.922.358.530 |
| 9        | Rp.70.000.000   | Rp.1.071.794.405  | Rp.3.780.000.000 | Rp.1.425.000.000 | Rp.6.346.794.405 |
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Table 5. Calculation of Eligibility for 20 Years

| Year | Revenue (million) | Expenditure (million) | Net Income (juta) | Cumulative | PV | PV |
|------|-------------------|-----------------------|-------------------|------------|----|----|
| 0    | Rp -              | Rp 60.354.000.000     | Rp 60.354.000.000| Rp 60.354.000.000 | Rp 60.354.000.000 |
| 1    | Rp 9.549.495.000 | Rp 2.670.000.000     | Rp 6.879.495.000 | Rp 53.474.505.000 | Rp 6.254.086.364 | Rp 6.174.862.873 |
| 2    | Rp 10.610.550.000| Rp 2.868.000.000     | Rp 7.742.550.000 | Rp 45.731.955.000 | Rp 6.398.801.653 | Rp 6.237.715.100 |
| 3    | Rp 11.082.130.000| Rp 3.175.000.000     | Rp 7.907.130.000 | Rp 37.824.825.000 | Rp 5.940.743.802 | Rp 5.717.828.876 |
| 4    | Rp 12.190.343.000| Rp 3.403.500.000     | Rp 8.786.843.000 | Rp 29.037.982.000 | Rp 6.001.531.999 | Rp 5.703.164.513 |
| 5    | Rp 11.789.500.000| Rp 3.722.050.000     | Rp 8.067.450.000 | Rp 20.970.532.000 | Rp 5.009.251.728 | Rp 4.699.915.755 |
| 6    | Rp 11.789.500.000| Rp 5.108.255.000     | Rp 6.681.245.000 | Rp 14.289.287.000 | Rp 3.771.388.623 | Rp 3.493.670.531 |
| 7    | Rp 12.968.450.000| Rp 5.590.780.500     | Rp 7.377.669.500 | Rp 6.911.617.500 | Rp 3.785.910.998 | Rp 3.462.697.101 |
| 8    | Rp 12.968.450.000| Rp 5.922.358.550     | Rp 7.046.091.450 | Rp 13.473.950 | Rp 3.287.053.663 | Rp 2.968.344.761 |
| 9    | Rp 12.968.450.000| Rp 6.346.794.405     | Rp 6.621.655.595 | Rp 6.756.129.545 | Rp 2.808.228.368 | Rp 2.503.821.776 |
| Year | Revenue (million) | Expenditure (million) | Net Income (juta) | Cumulative | PV  | PV  |
|------|------------------|----------------------|-------------------|------------|-----|-----|
| 10   | Rp 12.968.450.000 | Rp 6.726.973.846    | Rp 6.241.476.155  | Rp 12.997.605.700 | Rp 2.406.359.248 | Rp 2.118.336.247 |
| 11   | Rp 14.265.295.000 | Rp 7.171.871.230    | Rp 7.093.423.770  | Rp 20.091.029.469 | Rp 2.486.201.758 | Rp 2.160.897.893 |
| 12   | Rp 15.326.350.000 | Rp 7.544.558.353    | Rp 7.781.791.647  | Rp 27.872.821.116 | Rp 2.479.518.636 | Rp 2.127.789.674 |
| 13   | Rp 15.326.350.000 | Rp 8.014.214.188    | Rp 7.312.135.812  | Rp 35.184.956.928 | Rp 2.118.065.284 | Rp 1.794.585.298 |
| 14   | Rp 16.858.985.000 | Rp 8.464.135.607    | Rp 8.394.849.393  | Rp 43.579.806.321 | Rp 2.210.626.220 | Rp 1.849.283.623 |
| 15   | Rp 17.684.250.000 | Rp 8.963.749.168    | Rp 8.720.500.832  | Rp 52.300.307.153 | Rp 2.087.618.566 | Rp 1.724.260.188 |
| 16   | Rp 18.863.200.000 | Rp 9.396.624.085    | Rp 9.466.575.915  | Rp 61.766.883.068 | Rp 2.060.202.735 | Rp 1.680.061.010 |
| 17   | Rp 20.749.520.000 | Rp 9.932.486.493    | Rp 10.817.033.507 | Rp 72.583.916.575 | Rp 2.140.092.413 | Rp 1.723.102.308 |
| 18   | Rp 21.221.100.000 | Rp 10.455.235.142   | Rp 10.765.864.858 | Rp 83.349.781.433 | Rp 1.936.335.426 | Rp 1.539.297.525 |
| 19   | Rp 21.221.100.000 | Rp 11.034.958.657   | Rp 10.186.141.343 | Rp 93.535.922.776 | Rp 1.665.515.505 | Rp 1.307.236.314 |
| 20   | Rp 23.343.210.000 | Rp 11.471.954.522   | Rp 11.871.255.478 | Rp 105.407.178.253 | Rp 1.764.586.483 | Rp 1.367.451.132 |

**Table 6. Results of a Financial Feasibility Study**

| Metric   | Value   |
|----------|---------|
| NPV      | Rp 6.258.119.470 |
| IRR      | 11.41%  |
| BCR      | 1.104   |
| PI       | 1.104   |
| PP       | 8.02    |
| ROI      | 10%     |

The following is a simulation graph for calculating the payback period in the Dumillah Hotel investment in 20 years. The payback period is obtained in the 8th year of the investment.
Investment Costs

Investment cost planning is needed to get an idea of the costs incurred when building and renovating a swimming pool. The calculation of investment costs is calculated through an approach mechanism is arranged as follows.

Initial investment costs: 1,189,200,000.00
Discount interest: 10%

| No. | Initial Investment Costs               |
|-----|---------------------------------------|
| 1   | water Playground                      |
| 2   | Labor costs                           |
| 3   | Waterboom development                 |
|     | CAPEX                                 |
|     | 1,189,200,000                         |

Income and Expenses

Income is earned from visitors using the pool and games offered. Expenditure planning for each alternative type of building consists of promotional, operational, labor costs, and land rent. Operational costs consist of costs due to electricity use, water use, and others, labor costs to support operational activities, and land rental costs that need to be paid to the government.

| Income                  | Year 1       | Year 2               | Year 3               | Year 4               | Year 5               |
|-------------------------|--------------|----------------------|----------------------|----------------------|----------------------|
| Waterpark Income        | Rp.958,125.00| Rp.1,006,031.25      | Rp.1,056,332.81      | Rp.1,109,149.45      | Rp.1,164,606.92      |
| Parking income          | Rp.82,125.00 | Rp.86,231.250        | Rp.90,542.813        | Rp.95,069,953        | Rp.99,823,451        |
| Revenue (EBIT)          | Rp.1,368,750.00 | Rp.1,437,187.50    | Rp.1,509,046.87      | Rp.1,584,499.21      | Rp.1,663,724.18      |

Payback Periods

**Figure 3.** Payback Period Graph for Dumilah Water Park Hotel Investment

**Table 7.** Initial Investment Costs

| No. | Initial Investment Costs               |
|-----|---------------------------------------|
| 1   | water Playground                      |
| 2   | Labor costs                           |
| 3   | Waterboom development                 |
|     | CAPEX                                 |
|     | 1,189,200,000                         |
| Income                          | Year 1 | Year 2 | Year 3 | Year 4 | Year 5 |
|--------------------------------|--------|--------|--------|--------|--------|
| **Promotion Costs**            | Rp. 70,000.000 | Rp. 70,000.000 | Rp. 70,000.000 | Rp. 70,000.000 | Rp. 70,000.000 |
| **Operating Costs**            | Rp. 100,000.000 | Rp. 110,000.000 | Rp. 121,000.000 | Rp. 133,100.000 | Rp. 146,410.000 |
| **Labor costs**                | Rp. 450,000.000 | Rp. 486,000.000 | Rp. 522,000.000 | Rp. 558,000.000 | Rp. 594,000.000 |
| **Land Lease Fee**             | Rp. 240,000.000 | Rp. 240,000.000 | Rp. 240,000.000 | Rp. 240,000.000 | Rp. 240,000.000 |
| **Total cost**                 | Rp. 860,000.000 | Rp. 906,000.000 | Rp. 953,000.000 | Rp. 1,001,100.000 | Rp. 1,050,410.000 |
| **Gross Profit (EBIT)**        | Rp. 508,750.000 | Rp. 531,187.500 | Rp. 556,046.875 | Rp. 583,399.219 | Rp. 613,314.180 |

**Results of Financial Aspect Analysis**

Some of the considerations in calculating cash flow are as follows:
1. The projection period is 10 years with a physical construction period of one year, namely 2020, and the operational period starting in 2021.
2. Investment costs come from own capital (investors).

Based on the results of the calculation of a financial feasibility study with an initial investment amount of IDR 1,189,200,000, the NPV (Net Present Value) from the renovation of the waterpark area at THR Dumilah Water Park is IDR 147,014,363 (greater than 0) so the investment is considered feasible. The IRR (Internal Rate of Return) is 12.56%, which is greater than the 10% interest rate. Meanwhile, the PP (Payback Period) of this investment is 6 years 1 month and an ROI of 12%.

### Table 9. Investment Feasibility Calculation

| Year | Revenue (million) | Expenditure (million) | Net Income (million) | Cumulative | PV (1,189,200.000) | PV (1,189,200.000) |
|------|-------------------|-----------------------|----------------------|------------|-------------------|-------------------|
| 0    | Rp. 0.000         | Rp. 1,189,200.000     | Rp. (1,189,200.000)  | Rp. 1,189,200.000 | Rp. 1,189,200.000 | Rp. 1,189,200.000 |
| 1    | Rp. 1,040.25      | Rp. 860,000.000       | Rp. 180,250.000      | Rp. 1,189,200.000 | Rp. 163,863.636   | Rp. 160,136.816   |
| 2    | Rp. 1,092.26      | Rp. 906,000.000       | Rp. 186,262.500      | Rp. 1,189,200.000 | Rp. 153,935.950   | Rp. 147,013.514   |
| Year | Revenue (million) | Expenditure (million) | Net Income (million) | Cumulative | PV | PV |
|------|------------------|-----------------------|----------------------|------------|----|----|
| 3    | Rp.1.146.87      | Rp.953.000.000        | Rp.193.875.625       | Rp.628.811.875 | 145.661.627 | 135.947.416 |
| 4    | Rp.1.204.21      | Rp.1.001.10           | Rp.203.119.406       | Rp.425.692.469 | 138.733.288 | 126.536.285 |
| 5    | Rp.1.264.43      | Rp.1.050.41           | Rp.214.020.377       | Rp.211.672.092 | 132.889.815 | 118.449.901 |
| 6    | Rp.1.327.65      | Rp.1.101.05           | Rp.226.600.895       | Rp.14.928.803  | 127.910.298 | 111.418.451 |
| 7    | Rp.1.394.03      | Rp.1.153.15           | Rp.240.878.390       | Rp.255.807.193 | 123.608.701 | Rp |
| 8    | Rp.1.463.73      | Rp.1.206.87           | Rp.256.864.505       | Rp.512.671.698 | 119.829.187 | Rp |
| 9    | Rp.1.536.92      | Rp.1.262.35           | Rp.274.564.144       | Rp.787.235.842 | 116.442.000 | Rp |
| 10   | Rp.1.613.76      | Rp.1.319.79           | Rp.293.974.408       | Rp.1.081.210.250 | 113.339.860 | Rp |

**Table 10. Results of a Financial Feasibility Study**

|                | Value         |
|----------------|---------------|
| NPV            | Rp147.014.363 |
| IRR            | 12.56%        |
| BCR            | 1.124         |
| PI             | 1.124         |
| PP             | 6.18          |
| ROI            | 12%           |

**Figure 4. Payback Period chart**
3.2 Area Design
Here are the designs and 3 Star Hotels planned on the THR Dumilah Water Park area.

**Figure 5. Water Park Amusement Park**

**Figure 6. Front View Design**
Figure 7. Parking Design, Meeting Room, Restaurant, Hotel, and the entrance to Dumilah Water Park.

Figure 8. Playing Area Design
Figure 9. Water Park Area Design

Figure 10. Café Spoor Area Design
3.3 Maximum Productivity

Based on the financial feasibility that has been done previously, it can be seen that the types of alternatives that have passed the test in financial feasibility according to the NPV requirements are positive as viable alternatives are as follows:

| Alternative     | THR Dumilah Water Park | Water park |
|-----------------|------------------------|------------|
| Invetation      | 60,354,000,000         | 1,189,200,000 |
| Income          | 303,744,678,000        | 13,084,152,710 |
| Spending        | 137,983,499,746        | 12,002,942,460 |
| NPV             | 6,258,119,470          | 147,014,363 |
| Testing         | Decent                | Decent |

Alternatives that have passed the physical, legal and financial aspects test will look for the highest land value through the maximum productivity test. In the previous calculation, it can be seen that alternative coworking space, coworking space and basement parking, waterpark, hotel, and convention hall can be said to be feasible. The results of the value calculation can be seen in the following table.

| Information | THR Dumilah Water Park | Information |
|-------------|------------------------|-------------|
|             | Hotel dan Convention hall | Water Park |
| Property Value | 6,258,119,470         | 147,014,363 |
| Investment Value | 60,354,000,000       | 1,189,200,000 |
| Building Value | 25,920,000,000       | 1,159,000,000 |
| Land Value | 19,661,880,530 (1500m2) | 1,011,985,637 (168m2) |
| Land Value / m2 | 13,107,920          | 5,440,782 |
| Property-value building values | (property value-building value) / Land area |
Based on the results of land value calculations in Tables 12 and 13, the value of land with investment in the THR Dumillah Water Park (Hotel and Convention Hall) is 13,107,920 / m², and if the waterpark renovation investment is 5,440,782 / m².

4. Conclusion
To increase the utilization of property assets that is more profitable for landowners, based on the results of the FGDs that have been carried out there is an opportunity to build a supporting facility for the development of Dumilah Water Park as a Hotel and Convention Hall. Both of these facilities have considerable economic appeal to support the function of the city of Madiun as a center for trade and services on a regional scale.

Based on the calculation of financial feasibility at Dumilah Water Park with an initial investment amount of Rp. 60,354,000,000.00 then the NPV (Net Present Value) is obtained of Rp. 6,258,119. then the investment is considered feasible. Likewise, the IRR (Internal Rate of Return) was obtained at 11.41%, greater than the 10% interest rate. Meanwhile, the PP (Payback Period) of this investment is 8 years with an ROI of 10%. Based on the results of the calculation of the financial feasibility study with the initial investment amount from the renovation of the waterpark area at THR Dumilah Water Park, which is IDR 1,189,200,000, the NPV (Net Present Value) is IDR 147,014,363 (greater than 0) so the investment is considered feasible. The IRR (Internal Rate of Return) is 12.56%, which is greater than the 10% interest rate. Meanwhile, the PP (Payback Period) of this investment is 6 years 1 month with an ROI of 12%.

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