

# Streetscape Enhancement for Supporting City Tourism Development

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# Streetscape Enhancement for Supporting City Tourism Development

Fabiola B. Saroinsong\* and Recky H. E. Sendouw

**Abstract---** Cities all over the world are facing strong competition in terms of attracting tourists. In tourism specifically, the competitive advantage is determined by services orientation and tourism characteristics of the city. Image of a city and tourist real experience directly impacts tourist satisfaction and selling point for the city. Streetscape design plays an important role in affecting the perception and experience of a city. This article reviews the streetscape enhancement for maintaining and improving Tomohon City's physical and visual that support tourism development. The community and environmental context, elements and conditions which are investigated and analyzed include 3 main categories: 1. Ecological conditions: natural values, topography, climatic condition, wastes disposal. 2. Community and socio-economic conditions: resources, activity types, community's craftsmanship, traditions, informal vendors. 3. Cultural values, infrastructure and architectural conditions: urban form, architectural details, visual identity (city visual image), road, pedestrian path and bridge condition, land use, materials, streetscape elements, land values, infrastructure. There are five zones of the streetscape, which are gateway, agricultural land, rest area, residential neighborhood, along commercial corridors and public service area. Some designs of streetscape elements are proposed with concern about maintaining a high quality-built environment, building city identity, highlighting good views, and connecting people to amenities and services.

**Keywords---** Streetscape Elements Design, Tourism Development, Urban Streetscape, Tomohon, Indonesia.

## I. INTRODUCTION

Tourism development can alleviate poverty, conserve nature, environment and resources, develop culture (Akpan, 2012; Evans, 2016). Cities are facing strong competition in term of global tourist market. They need promoting attractive and distinctive sense of city.

The tourism development in Tomohon City has a great opportunity with its various potentials, among others, the attractive nature-based tourism, craftsmanship local community, some beautiful views and natural resources, cool temperature whole year, as described as follows.

1. Natural resources and phenomena - Tomohon City is surrounded by 3 mountains namely Mount Lokon, Gunung Mahawu, and Gunung Masarang. Tomohon City also has a mountainous and hilly topography from north to south. In addition, there are also waterfalls Tapahan Telu Tinoor, Lahendong forest. It is still equipped with the existence of biodiversity, including native and endemic species of flora and fauna.
2. Tomohon City is located at an altitude of  $\pm 700$  m above sea level (asl) and kind of cool and comfortable for many outdoor and indoor tourist activities.
3. Horticulture in general, and more specific floriculture, has been well developed by local community.

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4. The location is close to the capital of North Sulawesi Province, Manado City (Tomohon-Manado is  $\pm$  22.0 km) with good access, making Tomohon directly related to the tourist destinations of Manado City. Tomohon City is also connected to other famous tourist destinations of Tondano City such as Lake Tondano and PuncakUrongo. Tomohon-Tondano is  $\pm$  15.0 km away.

Tomohon City Development Vision according to Tomohon City Medium-Term Development Plan (RPJMD) - Changes of the Year 2016-2021 is: "Empowering religious, democratic, prosperous, and environmental friendly community towards world-level tourist destination city". However, Tomohon City, just like other cities that working on tourism development, is facing strong competition in terms of attracting tourists. In tourism specifically, the competitive advantage is determined by services orientation and tourism characteristics of the city.

The Tomohon City Development Program as the City of Flower has been established and supported by the law as the legal basis for its implementation. Some of the local regulations are:

- No. 7 of 2008 dated 14 March 2008, concerning the determination of Tomohon City as the City of Flower.
- No 8 Year 2008 Date 14 March 2008 on the establishment of Tomohon Flower Festival program (2 years).
- No. 11 Year 2008 dated 24 March 2008 concerning Floriculture Business Development in Tomohon City.

Departing from some of the foundations mentioned above then the general theme set as follows. This article reviews the streetscape enhancement for maintaining and improving Tomohon City's physical and visual that support tourism development.

## II. LITERATURE REVIEW

Tourism products is an experience. Thus, it can be understood that the effort to create and or improve the quality of tourist experience is crucial to the success of tourism development in a region (Embaby, 2015; Evans, 2016; Botha, Saroinsong, Kalangi, 2017). Tourists who are satisfied with their experience and the image of a place usually have a desire to return again. In addition, she/he will not hesitate to tell his good experiences to others so that it serves as a mouth advertisement or be a good social media reporter. Tourist's needs should be effectively identified and satisfied; the sector would become attractive, viable and sustained (Akpan, 2012).

When people visit or pass through a place or city, they experiencing the essence of the city or the area that naturally occurred along its main streets (Embaby, 2015; Hartanti, 2007; Jordan, 2016). Visitors experience about streetscape character composed by scenery, structures and buildings, trees, and other elements along the street are recorded and create an image of the city. With low quality of design, a streetscape can negatively affect the visual image of a city and visitors' satisfaction, and consequently the place of the city globally. If a city's streetscape looks dull, the city looks unattractive (Hartanti, 2007). Some studies conclude the importance of developing urban environment visual image in cities, through directing urban planners and designers to the important role of streetscape in achieving sustainable development, in addition to identify the methods of application of sustainability in streetscape (Embaby, 2015; Hartanti, 2007; Jordan, 2016; Rehan, 2013).

One of the major challenges facing many cities in trying to bring about sustainable tourism development is in the area of determining effective management structure or approach applicable in the sector. Many requirements and

design considerations must be taken into account in sustainable urban design for streets. There are three main principles of sustainable streetscape, they are urban principles, economic principles, and environmental principles. Furthermore, four main points of streetscape including legibility, comfort and safety, attractiveness, and liveliness as the following (Rehan, 2013).

**Legibility:** Legibility is a characteristic whereby a city is easily understood by residents and visitors and allows them to move about in the city with ease. Important streets and squares must therefore look important – they must be surrounded by stately buildings and lined by tall trees, must have wide roadways and sidewalks, special street furniture and ample light at night” (Jordan, 2016; Rehan, 2013). We propose to characterize Tomohon City based on City Development Program as the City of Flower.

**Comfort and safety:** Each streetscape must be functional. This means that it must be responsive to the needs of all its users, motorized and non-motorized alike. In other words, it has to be designed and furnished for comfort and safety of all: pedestrians, drivers, strollers, street café patrons, shoppers, sightseers, etc.(Feizi, Ahmadi, & Ahmadi, 2014; Hartanti, 2007; Jordan, 2016; Rehan, 2013).

**Attractiveness:** All streetscape elements should be aesthetically pleasing, to improve the visual image for any city, and to achieve sustainability(Embaby, 2015; Feizi et al., 2014; Garu Muni Wathsala Lakpriya Gunawardena, Kubota Yoichi, & Kiyotaka Fukahori, 2015; Hartanti, 2007; Jordan, 2016; Rehan, 2013). This will not be achieved without applying the suitable design rates at the level of urban design.

**Liveliness:** Streetscape must not function as mere movement and infrastructure corridors. Streetscape should supports healthy urban communities. Depending on their role in a broader urban context, they must be designed as lively spaces where people can see other people and be seen, where they can meet and interact. To achieve sustainable urban design of the streetscape, the principle of liveliness should be taken into account. The image of the city and its attractiveness to visitors to a large extent depend on its street life(Garu Muni Wathsala Lakpriya Gunawardena et al., 2015).

The following streetscale elements can improve the clarity of the path (Jordan, 2016):

a. Continuity of pedestrian and vehicle mobility

- Sidewalk should provide continue pedestrian lane from the start point to the main tourist attraction. It is also important to emphasize the store entrance along the path by the sidewalk pattern, and color. Moreover, the material and color of the city floor should be clear to differentiate the functions.
- Trees and landscape strip to provide shade for pedestrian. It should not place in front of the entrance and cover the store sign.
- Street furniture such as store sign, route guide, parking sign, street lamp to emphasize a particular area and provide rest area in the path and the open space with the Chinese element design.
- Crossing should provide to connect the shopping strip and the focal point area with a sign and must be separated from parking area.

#### b. Clear visual view

- Planters placed beside the store door to define the building's entrance.
- Median can divide and clear the path view.

#### c. Direction and turn guidance

- Street furniture such as signage can guide the next route of the turn and node. It shows the direction to the commercial features and tourism spots.
- Some types of trees have a role as guide to travel inside the path. It should guide the people to the next route and the focal point of area.
- Curbs are important element to distinguish the pedestrian and vehicle lane. It forms a line that can lead the vehicle to travel through the path. Curbs area consists of bollard with the same color with other furniture to border the sidewalk and the open space

### III. METHODOLOGY

1) This study was conducted in Tomohon City, Province of North Sulawesi, Indonesia. particularly the streetscape of the North-South mainstreet. The observed streetscape is that along North-South mainstreet of Tomohon City, which traverse successive villages as follows: Tinoor 2 - Tinoor 1 - Kinilow - Kinilow 1 - Kakaskasen 1 - Kakaskasen 2 - Kakaskasen 3 - Kakaskasen - Kamasi - Kolongan and Paslaten - Walian - Talete 1 - Paslaten 1 - Paslaten 2 - Matani 2 and Kamasi - Kolongan 1 - Matani 3 - Walian 1 - Lansot - Tumatangtang - Tumatangtang 1 - Lahendong.

2) This study covers several stages of activity as below.

- Preparations, covering preliminary studies on Tomohon.
- Data collection related to existing condition including physical and natural environment, social culture and economy in general Tomohon City through desk study and field observations.
- Data analysis is performed to identify common conditions, problems and potentials, problems and shortcomings, strengths and threats related to planning, design and streetscape management.
- Formulation of the concept of streetscape enhancement to support the development of Tomohon City tourism and compile streetscape management advice and examples of streetscape element design in main road Tomohon City.

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4) The community and environmental context, elements and conditions which are investigated and analyzed include 3 main categories:

- 5) Ecological conditions: natural values, topography, climatic condition, wastes disposal.
- 6) Community and socio-economic conditions: resources, activity types, community's craftsmanship, traditions, informal vendors.
- 7) Cultural values, infrastructure and architectural conditions: urban form, architectural details, visual identity (city visual image), road, pedestrian path and bridge condition, land use, materials, streetscape elements, land values, infrastructure.

## IV. RESULTS AND FINDINGS

### 4.1 Ecological Conditions

#### *Nature values*

After passing the north gateway of the Tomohoncity, there is a still a very long pause before reaching the residential area in general or downtown area (Figure 1). Based on observations, scenic vistas -whether to expansive open space areas within the city or to the mountains beyond- are a key element of the nature of Tomohon City's streetscape (Figure 2). The city's varied topography provides beautiful panoramic views to Manado City, Mount Tumpa, Manado Tua Island, sea, agroforestry landscape, Mount Lokon, Mount Masarang, and Mount Tampusu.



Figure 1: General Condition of Streetscape Between the North Gate and the Settlement Area.



Figure 2: Beautiful Natural Views from Mainstreet (Mount Masarang and Mount Lokon)

#### ***4.2 Community and Socio-economic Conditions***

In the city of Tomohon found several stalls where to sell plants for the manufacture of landscape plants as well as kiosks of cut flowers either that have not or have been strung. The existence of these stalls became one of the characteristics of Tomohon City and is a potential that needs to be managed.



Figure 3: Some Stalls of Landscape Plants and Cut Flowers Stores that Characterize the Streetscape of Tomohon City

#### ***4.3 Cultural Values, Infrastructure and Architectural Conditions***

Indeed, with the city development plan as tourist destination city, Tomohon City should have a reception area which is capable of performing functions as a greeter area of its visitors as well as the function of the information giver and the identity of the city.



Figure 4: North Gate of Tomohon City

In addition to the improvement of the physical structure, the rearrangement of the northern gateway needs to be done. First, the use of ornamental plants with the dominance of green at this time needs to be replaced with ornamental plants are more colorful than the color of flowers and leaves. This is because the background of the park itself has been dominated by the green color with the trees. The use of flowering ornamental plants is needed because it is related to the effort to show the characteristic of Tomohon City as the City of Flowers. In addition, it is necessary to increase the length of the park with a theme to reinforce the impression moreover this park enjoyed from vehicles that are going through it.



Figure 5: Green Line of Streetscape around the North Gate.

#### ***Rest Area***

Streetscape near rest area has very beautiful views either to around the rest area itself, as well as a view towards Manado City, sea, and Mount Tumpa. Physical structure of rest area in the form of pole buildings with the center of the tower of view decorated with statue of Bird Manguni need to be managed properly. The dominance of the physical structure needs to be balanced with an aesthetic garden. The dominant green view around rest area can be enhanced by flowering ornamental plants.

#### ***Sidewalk***

Sidewalks or pedestrian path are made along streetscape in settlement area and in the center of Tomohon City. The sidewalks are directly adjacent to the road while the down sidewalk is a water channel making it difficult to make planting holes or planting directly on the ground. However, its usage is disrupted because of electricity poles, broken, dark at night, or already covered by trees and weeds (Figure 6).







Figure 6: Some points of the Sidewalks are Disrupted Because of Electricity Poles, Broken, Dark at Night, or Already Covered by Trees and Weeds.



Figure 7: The bridge grip is rusty.

In the green that are found along the North-South main street, the existing vegetation were recorded. The high vegetation constitutes only of trees of *Samaneasaman*. In the central area of the city, there are rows of *Samaneasaman* trees planted tightly between the asphalt road and the sidewalk. In some area, these trees are planted on the asphalt road after making small holes at street (Figure 8). The presence of various types of trees on the edge of the road, pedestrian and in the city parks create the comfort, beauty, and serve ecological functions (Brown, Vanos, Kenny, & Lenzholzer, 2015; de Groot, Alkemade, Braat, Hein, & Willemen, 2010; Díaz et al., 2007; Fadli Rahman, Josephus I. Kalangi, 2018; Saroinsong, F., J I. Kalangi, 2017; Yusviana Botha, Fabiola B. Saroinsong, 2017). Trees in streetscape can reduce air temperature by blocking sunlight, reduce wind speed, absorb and block noise and reduce glare, absorb carbon dioxide and potentially harmful gasses, such as sulfur dioxide, carbon monoxide, from the air and release oxygen, help settle out and trap dust, pollen and smoke from the air, and can create an ecosystem to provide habitat and food for birds and other animals. The planting of this tree species, *Samaneasaman*, receives the attention of researchers, because naturally this tree can grow large with roots that can damage asphalt roads, sidewalks, and waterways under the sidewalk. For the best use of plants, there are several

things to consider in the selection of plants. They are, compatibility with the local climate, presence or absence of obstacles to a particular view, root and canopy growth, environmental stress resistance, maintenance needs.



Figure 8: Planting of Trees in Centre of Tomohon City

We found many rusty signage and old decorative lights that are no longer working or broken some parts (Figure 9). Not only with the reasons for revamping the face of the city, but also the security, the immediate handling is really needed. Some of the dustbins along the main road were broken so that cause problems with both visualization and bad smell (Figure 10). There are points where the sidewalks cannot be used anymore because of hole or unmanaged plants (Figure 11).



Figure 9: Condition of Some Information Boards Requiring Repairs or even Replacement



Figure 10: Dangerous Street Lights.



Figure 11: Broken Trash Bin.

OpoTololiu Monument Garden is located in a busy lane of mobility of motor vehicles but at the same time easily attract people because it is at the crossroads. The fountain conditions that have been damaged cause water puddle problems (Figure 12). Plants that are currently growing seem not yet well designed and managed. The overall appearance of the monument OpoTololiu Monument Garden needs to be redesigned so that this streetscape element becomes one of the accessories that support the appearance of the city.





Figure 12: OpoTololiu Monument.

10 There is still no any attractive public art located throughout the north streetscape. Even though, public art plays an important role in relating the story and identity of the city, creating a landmark and city legibility, and in creating opportunity for residents and visitors to participate and share in its development (Jordan, 2016; Rehan, 2013).

#### 4.4 Enhancement of Tomohon City's Streetscape

The observed streetscape requires pedestrian-oriented amenities, such as outdoor seating, plazas, public art, lighting, pavement detail, shading devices and plants, and enhanced shelters. There is a need to promote excellence in the design of landscaping lighting and signage in all commercial and residential developments by means of design guidelines for each type of use. Tomohon City also need parking area in the middle of the city considering the effort to enhance view and amenity.

5 There is close relationship between landscape planning, design, implementation and management with tourism development. Sustainable streetscapes can be defined as "multimodal rights of way designed and operated to create benefits relating to movement, ecology and community that together support a broad sustainability agenda embracing the three E's: environment, equity, and economy", and implementing sustainable urban streets can create more livable communities and support tourism development (Evans, 2016; Feizi et al., 2014; Rehan, 2013). The planning and development of TomohonCity management as a sustainable tourism area demands special attention to the sustainability of environmental supporting capacity. Management measures should be in accordance with the objectives of environmental protection, economic and regional culture. In designing process, designs are directed to the extent of using local materials, applying environmentally friendly techniques, local architecture, nature and characteristics of the local environment, always keeping the standards tested so that the landscape of the city is truly can support tourism activities optimally. Tomohon City Community as an integral part of Tomohon City tourism development is a huge potential so that its empowerment in tourism development in general and arrangement of landscape to support tourism in particular, is not an option but a necessity.

Streetscape must meet environmental principles to achieve sustainable street. Planting is a solution that <sup>16</sup> reduce impacts on environmental resources, and minimize impacts on the natural environment, encourage and support biodiversity. We propose using various plants not only for increasing an aesthetic visual character, but also because of its good contribution in urban ecosystem health (Feizi et al., 2014; Garu Muni Wathsala Lakpriya Gunawardena et al., 2015; Rehan, 2013). Plantings also help to keep the sidewalks comfort and minimize the negative impact, temperature, pollution, and glare, of the street. Size of trees canopy is chosen properly based on environment condition. Tree species for central area of Tomohon City have smaller canopy than those for streetscape in residential area. Plants for this streetscape of main street are particularly <sup>9</sup> well adapted to the harsh conditions of urban environment. <sup>18</sup> Planting urban-tolerant canopy trees was important in mitigating the urban heat island effect, which referred to the rise in temperature in urban areas as a result of solar heat absorbed by large areas of pavement. However, selection of tree species for streetscape should concern several things.

Along the proposed streetscape design enhancement, we also highlight the consideration of as much as can environmentally friendly techniques in Tomohon City's streetscape design and construction. It includes sustainable features such as: water efficiency, energy efficiency, use of recycled materials, improve trash disposal management, management of surface water and sustainable materials.

In order to achieve sustainability in streetscape at the economical level, the economic principles are also considered. Streetscape must create a good environment for people to visit, do proper activities and gather (Rehan, 2013). <sup>17</sup> Social and economic interactions are communal goals of a good streetscape design. So sustainable streetscape aims to:

- Improve environmental quality and increase local community and tourists comfort <sup>13</sup> by improving air quality, reduce heat island effects, improve water quality, and reduce light pollution (Fadli Rahman, Josephus I. Kalangi, 2018; Rehan, 2013; Saroinsong, F., J I. Kalangi, 2017).
- Sustain social well-being by making the streetscape fit enough for public walking and gathering places where social interaction can occur on a regular basis, and encourage tourism outdoor activities (<sup>23</sup> Dahmann, Wolch, Joassart-Marcelli, Reynolds, & Jerrett, 2010; Rehan, 2013).
- Sustain economic vitality by reducing consumption of material resources.
- Sustain limited natural resources regionally by reducing energy use, water use, and storm water runoff by increasing permeable surface area and landscaping.
- Sustain city selling points by improving the visual image for any city (Evans, 2016).
- Facilitate and encourage walking, shopping and window shopping, and other recreational activities, day and night. Streetscape improvement could be reached by providing comfortable separation of pedestrians from vehicular, trash receptacles, and pedestrian lighting.

Along with physical improvement, there is a need for efforts to accommodate the role and participation <sup>24</sup> of the community in streetscape management and tourism development, and the steps that need to be done for the development of tourism benefits the local community both from the socio-cultural and economic aspects such as (de Groot et al., 2010; Lucey & Barton, 2011)

- Empowerment local community in serving tourism attraction and being good hosts.
- Training, capacity building, and assistance in the manufacture of handicraft and souvenir products.
- Training as a guide as well as supporting staff in tourism services.

The results of the analysis of the landscape of the northern reception area and the North-South main road are then processed, created in the form of several products as follows:

Making a theme (Universality) → Division → Distinction

After setting a street landscape theme for whole main street of Tomohon City, we then make the division of it and the differentiation or specification in the design of each section.

The defined theme has implication to the selection of plants used in the streetscape. It gives priority to flowering plants with the consideration of ecological values as well as community's sociocultural values.

### *City Gate*

The city gate of Tomohon City expresses "welcome" to the visitors as well as bears the function of introducing the identity of Tomohon City. Based on the function, the reception area is marked by the existence of a city gate or also known as City Gate.

The gate of the city is a building that serves as a border area. In the past, city gates in addition to functioning as borders also functioned as bastions, for example as in the State of Egypt. This country, as well as other countries, possesses and develops a strong self-defense in an attempt to fend off enemy attacks from outside. The city of Cairo served as the capital of Egypt from the beginning of the founding of the country was built in such a way that it was strengthened by a formidable defense to keep the country and its citizens safe from all sorts of enemy attacks at any time.

Nowadays, City Gate is more a marker of entry into a city or area. City Gate in general is a building that symbolize or express the city, or lift the hallmark of a city, represents the identity of the city. Attractive appearance not only through physical building structures but no less important is by landscaping or garden arrangement. Moreover, in relation to the emphasis identity of Tomohon City as the City of Flowers then the selection and arrangement of plants, especially flowering plants become the main thing.

Sometimes City Gate connects directly, otherwise it becomes an area with rest area (rest area). In such cases, City Gate is also designed and organized in such a way that it displays tourist information, there are activities in the economic field that are directly related to the needs of visitors, as well as providing the necessary public services.

Streetscape between Tomohon City North City Gate - Rest Area

Climatological conditions are still dominant climatological conditions of lowland areas. Thus, the selection of plants during design should consider this. Efforts to show the theme Flower City, green lines outside urban areas were given a touch through flowering shrub plants. In addition, shade trees are not only green but also trees that produce flowers. Surely without putting aside the goal to absorb pollutants and soil and water conservation efforts.

Park in Front Rest Area.

Rest area with excellent view potential and attractive physical structure that has been built needs to be supported by the arrangement of the landscape that adds to the attraction of people / tourists. The use of various flowers in this area needs to be directed as an attractive foreground of the dominant physical structure as well as the dominance of the green color of the trees around the rest area to the far area behind it.

Streetscape between Rest Area – the Centre Area of City

It is a transition area between the lowlands and the highlands. Likewise with the green line between the north gate and the rest area, the effort to showcase the theme of Flower City is also done in this area by giving a touch with plants that produce flowers.

### ***OpoTololiu Monument***

Both plants and plants used in OpoTololiu Roundabout Park are selected in bright or bright colors so that it is easy to attract the attention of people both day and night and. This is because its position is located at the intersection of the road as well as the busy lane of motor vehicles. With the use of bright or bright colors then the driver is more careful and not easy to hit him.

Street and City Road between OpoTololiu Roundabout Park - Tomohon City South Gate Park.

With its position in the downtown area, the arrangement of curbside paths in this area has an important role in the improvement of the face of Tomohon City. In this area developed a more special design. Some things to consider are wide pavements at certain points, the holding of the Tomohon International Flower Festival every two (2) years, and more pavement users than areas outside the city center.

The proposed enhancement supports the continued growth of historical, cultural and local resources awareness in all areas of the city especially in streetscape of Tomohon City's mainstreets. Near shopping areas, they built Tomohon Tower (Alfa Omega Tower) as a landmark of Tomohon City which will become an important icon. To support the visual value of Tomohon Tower, it needs to be accompanied by aesthetic and attractive surrounding. Our study also highlights a need to encourage and support preservation and efforts to retain the city's cultural and historic identity including OpoTololiu Monument, Stella Maris School and Cathedral Church.

The concept of streetscape design enhancement above is translated into some streetscape elements (Figure 13).



Figure 13: North City Gate Park

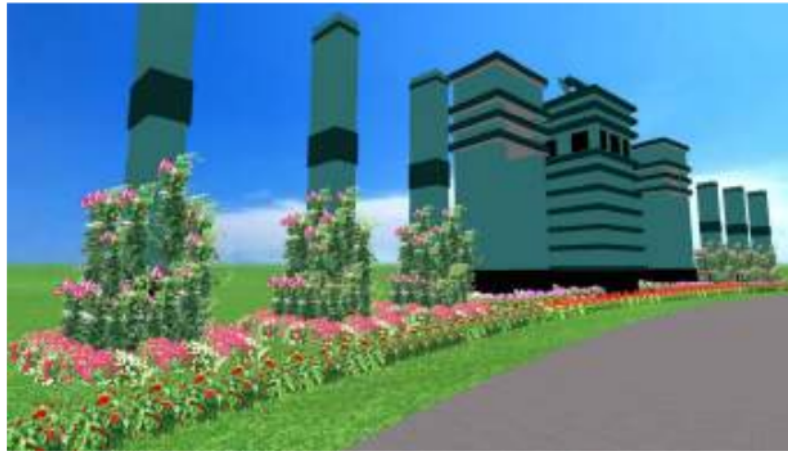


Figure 14: Streetscape around Rest Area



Figure 15: OpoTololiu Monument



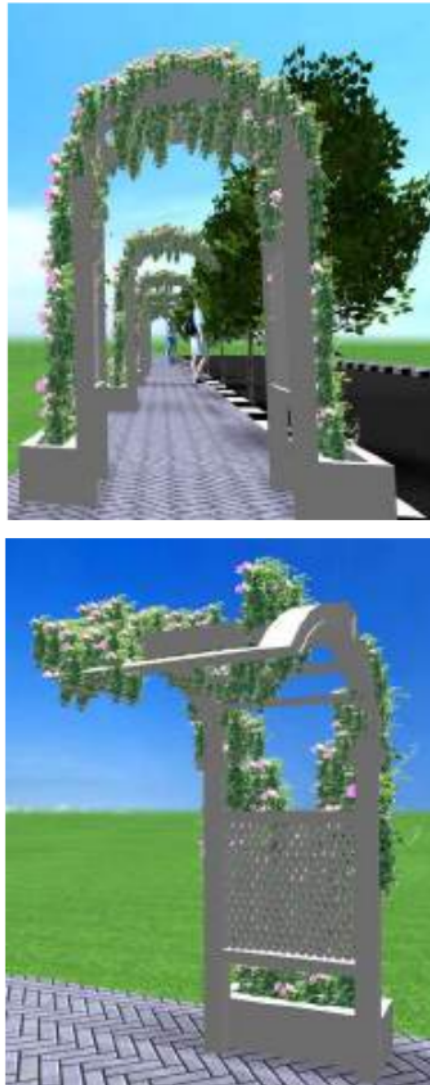


Figure 16: Pergola, Shelter, Lighting, Trees in Centre Area of Tomohon City.

## V. CONCLUSION

The results of observation on ecological conditions, community and socio-economic conditions, and cultural values, show that Tomohon City need improvement of streetscape physical and visually in order to support better tourist experience and good image of city.

Streetscape enhancement is proposed for maintaining and improving the city's physical and visual composition with emphasis on maintaining an attractive and engaging nature and built environment, building a strong sense of place and identity, contributing to a safe street, and highlighting views and amenities.

For a note, the results of the study have been recommended to the government of Tomohon City through the Regional Planning and Development Board (BAPPEDA) of Tomohon City and some have been and are being applied or applied in the development of Tomohon City.

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