Background

Marikina is a chartered city at the eastern edge of Metropolitan Manila. It occupies a land area of approximately 2,150 hectares. In 2007, it had a total population of 479,394. It is famous for its shoe industry.

Being a relatively new component city situated in the peripheries of the metropolitan, it has assumed the suburban role of “bedroom community” to its neighboring cities for a time. In recent years, however, the rapid sprawling of industries and commercial establishments from the metropolitan core spilled over into the city.

Because of urbanization and increase of population density within and around its environs, Marikina City has faced problems with traffic and traffic management. A particular challenge is the management of traffic brought by the passage of vehicles in the eastern part of the city which is close major universities.

Much of the city's infrastructures are as old as its history dating back to Spanish colonial times. Because of this, it has suffered internal problems ranging from limited road network to lack of facilities owing to difficult regulation of public infrastructures. With its economic growth also came emblematic problems like illegal occupancy of public spaces, particularly the sidewalks.
In 1992, a new wave of change has beckoned with the election into office of Mayor Bayani Fernando or BF as he is popularly known. An IATSS Project on Local Governance study stated that BF has not only "introduced a number of innovations in the city’s governance and development" but, more importantly, a "rather distinct brand of leadership in the Philippine politics and administration."

When one has to broadly examine the transformation that has beset the city of Marikina in the last decade, one can not divert any farther from the projects piloted by then Mayor Bayani Fernando who was elected to office three times in a row until 2001 when he was succeeded by his wife Ma. Lourdes Fernando.

The continuity of the governance of the Fernandos paved the way for the subsistence of many remarkable projects. Among these is the establishment of the Marikina Bikeways Project (MBP), which was initially organized by Bayani Fernando in the late 1990s. Ma Lourdes Fernando led the full implementation of the program in 2001 when she became mayor.

Population

In 2007, Marikina City had a total population of 479,394. It charted an average of 2.46% annual population growth rate in the years 1997 to 2007 (Figure 7).

![Figure 7. Population growth of Marikina City from year 1995 to 2007 (Source: Marikina City Website)](image)

In the 2000 census, Marikina City ranked as the 10th most populous unit in Metro Manila. In the same census year, the population density of the city was 11,515 persons per square kilometer. Although its population density is high, this is relatively lower compared to its neighboring cities.

Development Challenges

Until 1992, Marikina was largely a town of shoemakers. Other than that, the town was ordinarily like many Philippine towns which has a Spanish masterplan. The streets were typically narrow, all leading to the center of the town where most of the establishments were located.

In the context of transport management, narrow thoroughfares translate almost at all times to traffic congestion, much more if the rate of developing infrastructures is slower than the rate of population
and economic growth. Mayor Bayani Fernando was determined to solve this problem and the other imminent problems of the future that involve the ease of mobility inside his local unit. The answer came to notice along the banks of the Marikina River.

Even before Bayani Fernando was elected into office, people in Marikina were already using the river easements along Marikina River for jogging and biking purposes. The three-meter wide river easements were originally intended as a passageway for trucks used for cleaning the river. With the concreting of these easements, biking enthusiasts and joggers became more enthusiastic in using the easements which provide open spaces. This development eventually led to more people riding their bikes and biking became popular not only in the river easements but also in the sidewalks. Soon enough, albeit minority in numbers, the biking fad assumed a utilitarian purpose, and bikers eventually came out of the river easements to the sidewalks. Around this time, Bayani Fernando has started the groundwork for his street side management program.

Sidewalk Management: A Look in the Past

In a retrospective report of former Mayor Bayani Fernando regarding his projects during his term, he said that “Like many big cities, Marikina has for years suffered anarchy on its sidewalks, abetted by official neglect and indifference and blatant refusal of vendors and hawkers to be disciplined, by commercial establishments which hogged the sidewalks as if these were their own garage and by pedestrians who made a dumping ground on them by sacrilegious disposal of wastes on what should be clean and clear sidewalks.” (UP-NCTSFI, 2003)

The natural course of action was to ‘clean’ the streets. In the course of the campaign, however, Bayani Fernando found out that restructuring and putting order in place in public places go beyond physical maneuvering. As such, his next series of projects was aligned to confront “people problems” first as a means of addressing the perennial problems on traffic, inter and outer city mobility and the environment.

In the earliest years of his term, he started the campaign “Disiplina sa Bangketa” (Discipline on Sidewalks), which took various forms and commenced on physical reconstruction, coupled with social reorientation and moral reformation.

Near the end of Bayani Fernando’s term, the city government liberated 90% of 600 kilometers of sidewalks. The government decided to paint the sidewalk to separate it from the space intended for motorized transport. The final report of the project stated that the people felt safer to walk in short distances as compared to when the streets were heavily crowded (UP-NCTSFI, 2003).

“Disiplina sa Bangketa” was further bolstered by another roadside campaign “Hassle-free Roadways.” This program aimed to relieve the city of congestion. According to BF, traffic is a representation of the city’s economy. With this program, congestion was reduced through strict enforcement of traffic and parking regulations. To instill discipline among the people, legal parking areas were designated and traffic signs were revamped.

On these projects, “Bayani Fernando has been very articulate about his political and administrative style,” which was “characterized by demonstrated political will” (UP-NCTSFI, 2003).

The Bikeways Project

On the last term of Bayani Fernando in 1999, he initiated the feasibility study of installing a bikeway system in Marikina City, which, by then, has reclaimed a lot of roadside space. At about the same time, according to the Metro Manila Urban Transportation Integration Study of MMUTIS, it was estimated that there are 10,500 bicycle trips in the city daily (JICA, 2000). This is a sizeable amount compared with the rest of the Metropolitan Manila which has 160,200 bicycle trips daily.
This project of Bayani Fernando aimed to provide the facilities for low-cost and environment-friendly alternative means of transportation within the city. This was, to a certain extent, influenced by the success of the physical reconstruction and social reorientation of Marikina’s sidewalks in the early 1990s. The local officials of Marikina City believe that biking is a good form of sustainable transport and it hopes to contribute to minimizing air pollution caused by motor vehicles (UP-NCTSF, 2000).

During the conduct of the feasibility study, an inventory of roads showed that most of the rights-of-way were narrow and sidewalks were not available outside the Central Business District (CBD) area. Although unpaved shoulders were already available in some areas, electrical posts prevent a continuous paving that could be possibly used for the bike lanes (UP-NCTSF, 2000).

A social analysis conducted through a series of focus group discussions (FGDs) relating to the proposal of building a bikeways network in Marikina City elicited positive response from the participants; although safety was also a major concern. There was also a consensus that it would take more than building a bikeways network to mainstream cycling in the city and, even more importantly, to get people to switch from motorized vehicles to non-motorized modes (UP-NCTSF, 2000).

The efforts of Marikina City were noticed by the World Bank (WB) and the latter gave it a Global Environment Facility (GEF) grant amounting to USD1.3 million in 2001 for the building of Marikina Bikeways as a demonstration project in the Philippines. On the same year, the leadership of the city was turned over to the wife of Bayani Fernando, Ma. Lourdes Fernando, who eventually oversaw the completion of the project.

Since 2001, the City of Marikina has modified its transport development program to actively promote greater use of bicycles and walking as alternatives to motorized transport. The World Bank grant also paved the way for the establishment of Marikina Bikeways Office (MBO), which is responsible for the supervision of the actual planning, construction and maintenance of the project.

**Key Transport and Environment Issues**

**Motor Vehicle Registration**

Table 9 shows the number of vehicles registered in the City for the years 2000, 2006 and 2007. A 31% increase in the overall motor vehicle registration was seen between the years 2000 and 2007. Year 2006 registered a higher number of vehicles than 2007.

<table>
<thead>
<tr>
<th>Type</th>
<th>2000</th>
<th>2006</th>
<th>2007</th>
<th>% Change 2000-2007</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cars</td>
<td>18,244</td>
<td>19,551</td>
<td>20,469</td>
<td>12</td>
</tr>
<tr>
<td>SUV</td>
<td>-</td>
<td>3,076</td>
<td>1,885</td>
<td>-</td>
</tr>
<tr>
<td>Truck</td>
<td>2,353</td>
<td>2,212</td>
<td>2,524</td>
<td>7</td>
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<tr>
<td>Buses</td>
<td>28</td>
<td>20</td>
<td>33</td>
<td>18</td>
</tr>
<tr>
<td>MT</td>
<td>8,938</td>
<td>22,583</td>
<td>17,108</td>
<td>91</td>
</tr>
<tr>
<td>Trailers</td>
<td>175</td>
<td>161</td>
<td>194</td>
<td>11</td>
</tr>
<tr>
<td>Total</td>
<td>52,181</td>
<td>71,904</td>
<td>68,616</td>
<td>31</td>
</tr>
</tbody>
</table>
One of the biggest increases in volume of vehicles in the city was with motorcycles, which are also currently the most ubiquitous form of public transport in the city (see Figure 8). A talk with local executives revealed that this increase in motorcycle registration resulted to the proliferation of tricycles, a three-wheeled public transport. It was also reported that motorcycle dealers offer price cuts to buyers.

![Graph showing percentage increase of registered vehicles between the years 2000 and 2007](image)

**Figure 8.** Percentage increase of registered vehicles between the years 2000 and 2007
(Source: Land Transportation Office)

At this time, the CTMDO has expressed concern over the large volume of tricycles in the city which significantly contributed to heavy traffic congestion. The CTMDO has also received concerns from the riding public regarding the nauseating smell of engine emissions from tricycles fueled by by Liquified Petroleum Gas (LPG). Presently, plans of converting LPG-fueled to electronic engines are being considered by the city government.

**Motorized Vs. Non-Motorized Traffic**

In its annual intersection traffic volume count done in March 2006, the Marikina City Bikeways Office observed a 9.54% bicycle share in the city traffic, as compared to a 4.25% share in 1999. According to the Accomplishment Report for January-April 2006 of the Marikina Bikeways Program, this considerable increase in traffic share of bicycles can be attributed to the positive results of the different bicycle promotions and campaigns and the continuous construction of bicycle lanes. Figure 3 shows a general increasing trend in the share of NMT. The year 2006 charted the highest percentage of NMT share in traffic at 9.88%.
The share of NMT in traffic increased significantly. At the onset of the bikeways project in 2002, a consistent increase in the use of NMT can be seen on the years following thereafter. On the other hand, before the commencement of the bikeways project, the motorized component of city traffic was seen to increase only modestly (Table 10). From 2002 until 2006, however, a negative change in the percentage share of motorized transport in the city was observed. During these years, the MBO was in full motion in the implementation of the bikeways project with steadfast education and information campaigns supporting the rapid construction of the bikeways system in the city.

<table>
<thead>
<tr>
<th>Year</th>
<th>1999</th>
<th>2000</th>
<th>2002</th>
<th>2003</th>
<th>2004</th>
<th>2005</th>
</tr>
</thead>
<tbody>
<tr>
<td>% Share of NMT</td>
<td>3.98</td>
<td>2.8</td>
<td>4.87</td>
<td>6.06</td>
<td>8.87</td>
<td>6.06</td>
</tr>
<tr>
<td>% Change</td>
<td>-</td>
<td>-29.65</td>
<td>73.93</td>
<td>24.44</td>
<td>33.93</td>
<td>24.44</td>
</tr>
<tr>
<td>% Share of MT</td>
<td>96.02</td>
<td>97.2</td>
<td>95.13</td>
<td>93.94</td>
<td>95.13</td>
<td>93.94</td>
</tr>
<tr>
<td>% Change</td>
<td>-</td>
<td>1.23</td>
<td>-2.13</td>
<td>-1.25</td>
<td>-2.13</td>
<td>-1.25</td>
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<tr>
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<td>100</td>
<td>100</td>
<td>100</td>
<td>100</td>
<td>100</td>
<td>100</td>
</tr>
</tbody>
</table>

(Source: MBO)

This trend, however, cannot provide a measured and accountable figure of the modal shift that transpired with the change in the traffic share between NMT and MT. Nevertheless, it shows that the streets are gradually used by NMT compared to when the bikeways project was not yet installed in the city.

Road Accidents Involving Bicycles

Another issue related to transport management of the bikeways is accidents involving bicycles (see Figure 10). It can be observed that there was indeed an increase in the number of bicycle users. But the reported cases of bicycle accidents also show that the city government may have been a little deficient in its new role of protecting the cyclists. Most of the accidents happened in the major roads without bike lanes.
In the Marikina City Bikeways Feasibility Study in 2000, one of the intended impacts mentioned was the reduction of air pollution. However, ever since the bikeways system has been started, no actual assessment has been conducted to measure the supposed reduction in air pollution.

![Graph showing bicycle-related accidents in Marikina City from 2002 to 2005](image)

*Figure 10. Number of bicycle-related accidents in Marikina City from the year 2002 to 2005 (Source: Accomplishment Report for January-April 2006 of the Marikina Bikeways Program)*

**Air Quality Indicators**

In April 2006, in support to the celebration of the Philippine Environment Awareness Month, the City Government through the Bikeways Office conducted a Carless Day along the main thoroughfares of the city. This event was the first of its kind in the country. One activity in the event was the assessment of air quality. Through the assistance of the Department of Environment and Natural Resources (DENR), two air quality monitoring devices were installed. Table 11 shows the results of the monitoring.

In the Shoe Avenue station, the levels of TSP concentration before, during and after the Carless Day were fairly better than the ambient air quality standard of 230 micrograms/N.c.u.m. It can be seen from this result that even on regular working days, air quality in Shoe Avenue is satisfactory. However, a significant drop was observed on the Carless Day itself, charting a three-fold difference in TSP concentration than regular days. The Bayan-Bayanan station recorded high concentration of TSP even on Carless Day. The three-day monitoring revealed very unhealthy levels of TSP concentration in the pollution index, well above the TSP standard for 24-hour exposure. It can thus be said that the Carless Day has little effect on the air quality of the Bayan-Bayanan area.
Table 11. TSP level before, after and during the Carless Day on Shoe Avenue Station

<table>
<thead>
<tr>
<th>Sampling date</th>
<th>Time</th>
<th>Weather</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>April 21-22</td>
<td>0930H-0930H</td>
<td>Sunny/Cloudy</td>
<td>167</td>
</tr>
<tr>
<td>April 24-25</td>
<td>0900H-0900H</td>
<td>Sunny/Cloudy</td>
<td>142</td>
</tr>
<tr>
<td>April 24*</td>
<td>0900H-1700H</td>
<td>Sunny</td>
<td>45</td>
</tr>
<tr>
<td>April 25-26</td>
<td>0930H-0930H</td>
<td>Sunny/Cloudy</td>
<td>153</td>
</tr>
</tbody>
</table>

(Source: Accomplishment Report for January-April 2006 of the Marikina Bikeways Program)

Transport and Environment Management Context

The era of Marikina City's transformation started with a simple vision: to be an industry- and government-friendly, happy working class community. The simplicity of vision, though, took various forms: physical reconstruction, social reorientation and moral reformation. Strong governance from its executive officials resulted in a cultural change transcending the physical.

The city government began with the wider environmental challenge of “Saving the Marikina River” from the ecological death. River rehabilitation and riverside park development were carried out in 1993, which included the construction of 11 kilometers of jogging and bike lanes on the river easements. This move paved the way for the presentation of an alternative lifestyle for the city resident, especially long-time bikers.

Two complementary programs, “Disiplina sa Bangketa” and “Hassle-free Roadways,” resulted to high-mobility pedestrianization within the business district. “Disiplina sa Bangketa,” became the basis of the city’s struggle to free its sidewalks from illegal vendors and other forms of obstructions. By October 1998, around 45 kilometers of new sidewalks have been constructed and 305 kilometers of existing sidewalks have been cleared. More important than the physical transformation is the social impact of this project. The clearing of sidewalks made people feel safer to use the streets. Before, the unavailability of sidewalk would oblige them to ride public transport even in short trips. Clear and well-managed sidewalks encourage them to walk instead. The liberation of sidewalks from general obstruction brought back a communal appeal for people who share the same sidewalk with others. The UP-NCTSFI Report (2003) referred to this effect as the instigation of more sense of community.

On the other hand, “Hassle-free Roadways” became a veritable demonstration that traffic congestion in an urban setting can be managed (UP-NCTSFI, 2003). The project imparted the strict enforcement of traffic and parking regulations, which was supported by the establishment of parking areas, upgrading of traffic signs and the opening of new access roads to decongest main thoroughfares. The self-policing policy was encouraged and self-discipline paid high dividends for the city and its people (UP-NCTSFI, 2003).

With these many in the city landscape, Marikina City adopted a new vision to “Be a Little Singapore” in 2001. In the same year, the city instituted the Marikina Bicycle network, which further strengthened the City's image as an environmentally-sustainable transport advocate.
Specific Programs and Initiatives

Promotion of Non-Motorized Transport (NMT) through the Marikina Bikeways Project

Marikina City jumpstarted the promotion of the NMT in the Philippines through the use of bicycles. As early as 1992, government officials began the city’s physical reform and social reorientation. Physical reforms in Marikina involved the sidewalk clearing operation and improvement of public places. Through these changes, the city was chosen for the implementation of a pilot project aimed to promote the NMT component of the Metro Manila Urban Transport Integration Project (MMURTRIP) in 1997.

The NMT component included the construction of a 66-kilometer bikeways network aimed to reduce air pollution and traffic congestion problems. Because of the focused dedication and effective management of the city administrators and officials, the World Bank Global Environment Facility (WB-GEF) offered a grant amounting to US$ 1.3 M to finance 19 kilometers of the Marikina City Bikeways.

Marikina City was an ideal site to establish the pilot project as the city’s transport congestion has not yet reached intolerable levels. In 1999, about 10,500 daily trips (2.9% of all trips) were still made through bicycle in Marikina. Approximately 160,200 trips were made through bicycle in Metro Manila at that time. However, under the baseline or “business-as-usual” scenario, increased motorized traffic in Marikina would possibly reduce the safety of bicycle travel and the use of bicycles to the lower level just like with the rest of Metro Manila.

The NMT system or the bikeways system consisted of the following components:

- 49.7 kilometers of segregated bikeways on existing roads and 16.6 km of bikeways along the Marikina river connecting to the Light Rail Transit station;
- traffic slowing and pedestrian facilities around schools and market areas;
- lighting to ensure safety;
- bicycle parking facilities at key interchanges;
- public awareness campaign;
- bicycle safety program; and
- rigorous monitoring and evaluation program and major dissemination effort.

Presently, the bikeway network connects residential communities with schools, employment centers, the LRT station and other public transport terminals. Parking facilities will be created. The connections with the public transport terminals will promote the use of both NMT and LRT for trips between Marikina and the rest of the metropolitan area, thus reinforcing the modal shift away from cars.

Although a feasibility study and a network design study have been prepared for the bikeways project when it commenced, there was a problem in acceptance from the city engineering group and the city council in designating certain roads as bikeways. This was due to the perceived constraints that the new facility will bear on the city’s narrow roads. It was feared that it will lead to limited road parking spaces and reduced road capacity for motorized traffic. The Marikina Bikeways network construction was gradually implemented adopting an “experimental approach” wherein the city engineers deployed what was only workable and acclimatized them to inevitable specificities. The intent was to allow opportunity of evaluation and adjustment in the course of the bikeway construction.

The project followed three major components and its sub-components:

**Component 1: Allocation and delineation of bikeways in suitable existing roads**

- Delineation and marking of bikeways in existing roads
- Upgrading of road condition through repairs and scarifying of road pavement surface for asphalt topping in the designated bikeways
• Putting up signages, markers and lane barriers in critical areas to protect bikers
• Identification of suitable roads for widening to accommodate bikeways
• Widening of roads through construction (land grading, compaction and laying out of concrete pavement and drainage improvement)

Component 2: Identification and construction of parking facilities for bicycles

• Identification of suitable parking spaces
• Requesting private landowners and establishment to provide small parking area for bicycles.
  An ordinance may be passed by the City of Marikina requiring commercial, industrial and institutional establishments to allot parking space for bicycles
• Putting up bicycle racks and parking sheds

Component 3: Upgrading of existing riverside bike lanes and their extension through construction of new bike lanes to cover the entire stretch of both riversides

• Rehabilitation of dilapidated segments of existing jogging/bike lanes through laying out of new pavement and rip rapping of riverbanks frequently eroded
• Construction of new bike lanes through land grading, concreting, drainage improvement and bank stabilization through engineering means
• Construction of hazard protection barriers (e.g., chain links, fence) in critical stretches
• Planting of shade trees in riverside

Marikina City Bikeways Office

The City government created an office to manage and supervise the bikeways system. It was called the Marikina City Bikeways Office (MCBO) and it was placed under the City Planning and Development Office and the Office of the City Engineer. The office was designated to develop the plan for the city’s bike lanes project and supervise its construction and maintenance in coordination with the City Engineering Office (CEO) and World Bank. It was also responsible for the provision of safe and strategic parking facilities, road signage and maps and planting of trees in designated areas of the bikeways network. During its operation, the MCBO forged partnerships with local and foreign organizations to facilitate easy access to bicycles for local residents. As advocates of EST, the MCBO staff also conducted a series of Bicycle Education & Safety Clinics for the youth and other activities that promote NMT lifestyles.

Strong support from the executive and legislative branches of the city government strengthened the MCBO. For instance, to assist the MCBO in imparting and sustaining the advocacy, the city government included in the traffic management codes the rules and regulations of NMT. The city government also constructed a cycling track at the city’s main sports park to support cycling enthusiasts and encourage others to get into this sport. The city government also administered a Bicycle Loan Project that gives city employees and students an opportunity to own a bike through an interest-free bike loan payable within 6 to 12 months. The city government handed over 150 mountain bikes to its Bantay Bayan volunteers.

The Marikina Bikeways Office was dissolved in December 2007 when the World Bank assistance ended. Most of the MCBO personnel were distributed to different sections of the city hall. The bikeways infrastructures were put under the custody of the City Transportation Management and Development Office (CTMDO). Currently, there is no separate bikeways office under the CTMDO. The bikeways program is introduced under the NMT. Several NMT ordinances have already been implemented to support the sustainable existence of the bikeways.

At the moment, the CTMDO, being more of an implementing and law-enforcing agency than planning, has yet to come up with plans on how to further sustain the bikeways project. Certainly, the CTMDO will continue to advocate NMT and EST, but they lack the necessary tools and technical knowledge on such
matters. Currently, the CTMDO is contemplating on advancing EST principles by developing mass public transit for the city.

With the dissolution of the MCBO, the advocacies and activities of the said project have been integrated to different offices in the city. For instance, the bikeways infrastructure has been included under the tourism office. Private groups and entities sometimes avail of a promotional package of the bikeways which includes a tour and a biking try-out in the city.

**Successes Achieved**

The widespread physical transformation of Marikina’s sidewalks has left not only an orderly city with a strong sense of community. This transformation has also paved the way for the advent of many lifestyle changes among its citizens, particularly in the way people move within the city. Highly-focused management, coupled with strong political will from the executives of the city through time has made many projects successful.

**Sidewalk Clearing**

The project “Disiplina sa Bangketa,” has liberated 90% of its 600-kilometer sidewalks for public use. In a sense, this project has renewed the city at the most critical time of its growth, shortly before becoming a highly industrialized city in mid-1990s. Consequently, the project also directed the future growth and expansion of the city by ensuring a walkable environment to subsequent infrastructure developments. The project infused the culture of walking as a form of transport among city dwellers by maintaining a safe and well-connected network of sidewalks in the business district.

“Hassle-free Roadways” has prevented imminent traffic problems through the strict enforcement of traffic and parking regulations, provision of parking areas upgrading of traffic signs and the opening of new access roads to decongest main thoroughfares. The self-policing policy was encouraged and, once again, self-discipline paid high dividends for the city and its people. There is now a marked discipline and order in the streets — the sidewalks are safe and clean and the vehicular traffic is now gentle on the nerve.” (UP-NCTSFI, 2003)

**Marikina Bikeways**

The success of the first two projects proceeded concomitantly with the success of the Marikina Bikeways Program. Marikina’s recent Bicycle Ownership Survey showed that 55% of families in Marikina owned or has access to a bicycle, majority of which uses the bike in going to work. Although the percentage of modal shift from motorized transport to non-motorized mode in Marikina is yet to be known, the city government has been successful in installing the necessary facilities to sustain the culture and growth of NMT in the years to come.

As of 2008, the city has already constructed 52 kilometers of bikeways. The bikeways network offers a direct and safe connection from residential areas to major transport terminals, markets, schools, employment centers and commercial and industrial establishments. Early this year, the city government has opened a bikeway between the established city network to the new LRT station in Santolan. Through the provision of bike parking facilities, it makes it possible for people to conveniently use the mass transit through biking from their homes.

Figure 11 shows the annual cost of the constructed bike lanes in Marikina City. A 12.2 kilometer bikeway was constructed in 1996 along the west and east sides of the Marikina River. In the late 1990s until 2001, 20,734.36 meters of bikeways were constructed through funding support by the local government amounting to PhP 39,898,318.94. But even during the full implementation of the WB-GEF project, the government has continually funded the construction of the bike lanes (Table 11). As a matter of fact, the city government has spent a total of PhP 82.9 million (56.45% of the total cost) in the construction of the
bikeways as of 2008. The budget for the bikeways construction was appropriated in the general construction/repair and maintenance of roads and drainages and land expropriation.

Figure 11 shows that the bikeways were heavily constructed between the years 2005 to 2007. 53.4% of the total expenditures in the construction of the 52 kilometers of bikeways were spent on these years alone. These were also the years when most of the funding for the construction of the bikeways came from the WB-GEF grant. Figure 12 shows the location of the yearly construction of the bikeways system from 1996 to 2007.

In recognition of the city’s efforts, the Marikina Bikeways Project was Awarded by the Gawad Galing Pook as an “Outstanding Program in Local Governance” in 2005. In addition, the World Bank has also cited Marikina as one of the four Model Cities in the World during its Annual Bank Conference on Development Economics in June 2006 in Tokyo.

![Figure 11. Cost of constructed bikeways from 1996 to 2008](source: MBO)

<table>
<thead>
<tr>
<th>Year Completed</th>
<th>Length (m)</th>
<th>Marikina Fund (Php)</th>
<th>WB-GEF Fund (Php)</th>
<th>Share (%) City Govt.</th>
<th>Share (%) WB-GEF</th>
<th>Total Cost (Php)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1996</td>
<td>12,200.00</td>
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<td>2004</td>
<td>2,779.76</td>
<td>4,383,220.21</td>
<td>9,195,391.60</td>
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<td>67.72</td>
<td>13,578,611.81</td>
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<td>2005</td>
<td>4,295.22</td>
<td>9,241,463.82</td>
<td>14,266,327.65</td>
<td>39.31</td>
<td>60.69</td>
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<td>2006</td>
<td>4,866.34</td>
<td>7,890,670.66</td>
<td>25,868,958.77</td>
<td>23.37</td>
<td>76.63</td>
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<td>2007</td>
<td>15,223.13</td>
<td>9,094,355.95</td>
<td>11,949,052.22</td>
<td>43.22</td>
<td>56.78</td>
<td>21,043,408.17</td>
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<td>2008</td>
<td>57.50</td>
<td>892,480.30</td>
<td>-</td>
<td>100</td>
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<td><strong>TOTAL</strong></td>
<td><strong>51,638.44</strong></td>
<td><strong>82,854,966.56</strong></td>
<td><strong>63,913,854.68</strong></td>
<td><strong>56.45</strong></td>
<td><strong>43.55</strong></td>
<td><strong>146,768,821.24</strong></td>
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Lessons Learned

A strong political will from the executive officers of Marikina City became the steering force in the management and implementation of the successful projects in the city. A post-evaluative study of Bayani Fernando’s style of management revealed that his strong political will was also “marked by an unusual decisiveness and determination supported by vision, good ideas, sound information, a patience for persuading and acculturating the public and the bureaucracy and a penchant for the organizational as well as technical details of implementation.” (UP-NCTSFI, 2003)

Another factor for the smooth conduct of many projects was the independence of the city government from higher authorities. This has been shown by the enactment of local codes, referred to as “landmark legislation” on crucial local issues, even when corresponding national codes existed to use the often untapped or underutilized powers of the LGUs (UP-NCTSFI, 2003).

In the installation of the Bikeways Project, a comprehensive preparation of the city was initiated not just physically, but as well as culturally and socially. The preparation for the eventual construction of the Marikina Bikeways has tackled many obstacles and resistance.

Education and information campaign on all echelons of the society can be an effective means of bringing social acceptance. Participative activities like “Marikina City Carless Day, “Bicycle Camp” and “Cycling Festival,” to name a few, can also be used as social marketing tools with wider scope of effects. It is also worthy to note the importance of instituting a working committee, in this case the Marikina Bikeways Office, whose exclusive responsibility was to run and man the project to generate its intended benefits.

The success of the project can be based solely on the adaptive rate of the people upon the inoculation of an alternative and its sustainability. On the first aspect, the city has not accounted the rate of shift from motorized to non-motorized mode, but relied only on traffic count survey. While it is observable that a considerable percentage of traffic has been using bicycles, this can not translate to an effective rate of modal shift, much so with the recent proliferation of registered motorcycles in the city. What can be said
presently is that the city, with its 52 kilometers of existing bikeways network, has installed sufficient facilities to cater to the NMT traffic in the years to come. However, with the increasing motorized traffic that is not properly regulated, the intended space for NMT may lessen in the years to come.

**Future Directions**

With the dissolution of the Marikina Bikeways Office (MBO), the bikeways program is being integrated under the City Transportation Management and Development Office (CTMDO), which is vested with the powers to manage, supervise, execute, enforce and implement all national and local laws, rules and regulations governing the operations/activities of all motorized and non-motorized vehicles within the city.

Although such integration is an indication that the city is determined in pursuing NMT, the CTMDO currently lacks the necessary tools and technical knowledge on matters involving the bikeways system. Most personnel of the MBO were distributed to different sections of the city hall except the CTMDO. To sustain the gains of the MBO, personnel of the CTMDO should be trained on the technical skills required by the job.

Another way of sustaining NMT even with the termination of the WB-GEF funding is through creation of NMT policies. There have been several municipal ordinances which support the bikeways program in the past and the full and strict implementation of these ordinances should maintain the NMT culture even with the change in city leadership. The legislation of the Bicycle Code of Marikina should then be pursued.

Currently, thorough education and information campaign pertaining to bicycle use is being planned out by the CTMDO. There are still some people who perceive the bikeways as restrictions on the road rather than an environmentally-sustainable form of transportation. The growing number of motorcycles in the city should also prompt the city government to create measures of control before the numbers reach an intolerable level that could threaten the biking culture.

Furthermore, the city government, out of its own initiative should continuously share the Marikina Bikeways experience to internal communities and other local government units through conferences and that NMT advocacies may spread and generate ideas for replication in other parts of the country.

**References**

Accomplishment Report for January-April 2006 of the Marikina Bikeways Program. Prepared by the Marikina Bikeways Office

Accomplishment Report for December 2001-June 2007 of the Marikina Bikeways Program. Prepared by the Marikina Bikeways Office

