The Marikina Bikeways Network:
An Initial Breakthrough in Local Sustainable Transport Planning

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Summary

This paper describes how the feasibility study for the Marikina Bikeways Network, the first such network of its kind in the Philippines, was prepared. The paper concentrates on the social dimensions part of the study that the author prepared and which he feels is at least as important as the technical design of the network. The network is a work in progress. The final study was submitted in May 2000 and the World Bank loan to finance construction is expected to be released by mid-year. However, a 9-kilometer network of riverside paths is already under construction by the local government. The network itself will be fifty kilometers long and include both on-street lanes and related apparatuses (parking facilities, ramps, etc.) and dedicated paths. This paper is submitted to solicit feedback regarding the conduct of the study and how such a process can be improved.

1. Background

1.1 Marikina City's Ambitions

Around 1998, the City of Marikina embarked on a campaign to remake itself into a more livable city. One of the first things that the city government did was to clean up the city market. Transforming it into a pleasant if atypical place to shop, with sidewalks clear of the ubiquitous vendors and vehicular traffic yielding to people on foot or on bike.

The other thing that the city government did was to clear an area overrun by urban poor informal settlements, and turn it into a riverside park. This park and its paths, which run on both banks of the Marikina River, form a central role in the city's proposed bikeways network.

Fortunately, the city has a favorable geographic location. It lies at the eastern end of the metropolitan area in an industrial valley at the foot of the hills of the Sierra Madre mountain range and through traffic bypasses the city by way of a six-lane highway on its eastern outskirts. It has been spared some of the worst traffic congestion and pollution that plagues the rest of the metro area.

1.2 Cycling Incidence

The city also just happens to have a relatively large incidence of cycling, even though bicycle trips form only a measly 1.1% of total trips (show table). Moreover, a survey of factory workers showed that almost 10% rode bikes to work. The city would like to see as many as 50% of workers commuting on bicycles.

Table 1. Trip Shares by Selected Modes in Marikina

Mode	*Percent of Total*
Walking	12.7
Pedicab	0.2
Bicycle	1.1
Tricycle	12.2
Jeepney	34.6
Car	17.5
Bus	10.1
Taxi	2.5

Source: MMUTIS, DOTC

On the other hand, the city was well aware that it was vulnerable to the malady of motor vehicle dominance that was causing such problems in other parts of the metropolis. Even though private car ownership was only 15% (versus 20% for Metro Manila), most travel within and from the city was already on motorized, albeit public, transport. Promoting non-motorized transport, particularly bicycling, seemed to offer an obvious solution, but it was far from obvious to city officials. They needed to be shown how the recreational paths they were building could be linked to an on-road bicycling network and how to encourage more people to ride bicycles.

At about the same time, the World Bank, embarking on a Metro Manila Urban Transport Improvement Project, decided to incorporate a bicycling component on a pilot basis and saw an opportunity for doing it in Marikina. Promising funds from the Global Environmental Facility, the World Bank offered to sponsor a feasibility study that would pave the way for the actual building of a series of bike lanes and paths.

This paper describes how the feasibility study, specifically its social dimensions component, was conducted. Having had no previous experience in doing something like this, we (i.e., those who were directly involved in the social analysis) wanted to know what the "experts" had to say, to tell us what we did right, what we did wrong, what we failed to do, and what else we should have done. You will be the mirror with which we hold our efforts up for scrutiny.

2. The study framework

The study framework involved three main data collection tasks, namely: (1) gathering baseline information on demographics, socioeconomic profile, land use and development plans; (2) collecting transportation data with regards to traffic conditions, travel demand, road network and

the public transportation system; and (3) conducting a social dimensions study to determine people's attitudes and perceptions regarding transportation, bicycling and a bikeways network in the city. The proposed outputs included: (1) a traffic engineering and management scheme; (2) engineering design and technical standards; and (3) a plan for promoting bicycling in the city. Three evaluation tools would be used to finally determine the feasibility of the project, namely: (1) an initial environmental examination; (2) an economic and financial analysis; and (3) a social acceptability analysis.

3. The study team

The team was made up mostly of transport "professionals," i.e., traffic engineers, transport planners, an environmental planner, an economist, and a catchall "social scientist". None of the team members except for myself was a practicing cyclist, and no one experience in bicycle planning. It seemed to me that traditional transport projects often left out or glossed over social analysis in favor of the more glamorous (and lucrative) infrastructure and engineering components. I was determined that social issues would be addressed adequately not just in the acceptability aspect of the project but in the physical design of it as well.

4. The social dimensions

4.1 Objectives

There are many guidelines on how to add "social dimensions" to feasibility and other studies. Essentially, they require the determination of how social aspects impinge on a project's design and implementation so that the project meets the needs of the community it aims to benefit in the most efficient, least costly, and most equitable manner. In tailoring them to the Marikina Bikeways Project, the following objectives were set out:[1]

1. To identify those social factors that are important for determining the scope and content of the project;
2. To assess what those factors imply for project design;
3. To determine the appropriate implementation arrangements that will be required to ensure a high probability of social acceptance by and maximum benefits for the target clientele; and
4. To suggest the outline of a strategy to ensure that the network is used effectively, that the incidence of cycling increases, that the safety of cyclists is assured, and that the bike network and its associated programs are monitored and evaluated in relation to expected benefits.

4.2 Aspects for Investigation

Based on these considerations, we hoped to determine the following:

the client population that will benefit from the project and its socioeconomic status;
the needs of the beneficiaries;
the demands of the beneficiaries;
the capacity of the target beneficiaries to benefit from the project;
the gender issues involved; and
the potential adverse impacts, if any.

4.3 Instruments

Because of the lack of any baseline data on bicycling [2], we proposed the use of three research instruments to gather the necessary information, namely: a survey of cyclists that would partially be conducted on-road; a set of focused group discussions that would involve the participation of various sectors of the general public that would be affected by the project; and an interview of key informants whose opinions would carry weight in ensuring the project's success. The city government was supposed to provide funds for surveys and perception and attitudes studies as its counterpart to the Bank funds. We were subsequently told that there was enough money only to organize the focus group discussions. However, the city government, upon the urging of some members of the feasibility study team, later conducted a survey of twelve manufacturing establishments that had a significant number of workers who commuted on bikes. The results of this survey were made an official part of this study although they were not included in writing the social analysis report.

Uncomfortable with having to rely only on the results of the focus group discussions as basis for making recommendations, I turned to a colleague who mobilized her class to conduct a cyclists' survey in the city. Because of time constraints, however, the results of this survey were delayed and could not made a part of the study.

5. The focus group discussions

5.1 Criteria

Five focus groups were organized with the assistance of the city government, which was responsible for inviting the actual participants based on a list of participant criteria. The qualifications of participants per group were carefully specified so as to ensure as broad a representation of stakeholders as possible. An effort was also made to specify the location represented by participants in order to ensure geographic spread. The FGDs were conducted over the course of two weekends in October 1999. Twelve participants were planned per group but only 44 (against a target 60) actually attended.

Table 2. FGD Participants' Criteria

Group	Group 1	Group 2	Group 3	Group 4	Group 5
Location	Nangka-Parang-Tumana	Concepcion-Bayan	Mixed	Mixed	Mixed
Gender	Mixed	Mixed	Women	Mixed	Mixed
Age	over 25	over 25	Mixed	Below 25	mixed
Other criteria	factory workers, sidecar drivers	school officials, office employees	housewives, community leaders, teachers	Students, local youth leaders	cyclists

5.2 Outputs

The FGD results provided inputs for two reports, namely: a framework for a strategic plan to increase the incidence of utilitarian cycling in the city, and an analysis of the social impacts of the project. The original TOR called for the specification of a bike safety program. However, it seemed foolish to simply produce such a program without grounding it in an overall campaign to promote bicycling among city residents. Also, producing a campaign and plan without doing consultations with affected publics not a desirable procedure on our part. As a compromise, we proposed to submit an outline of the major points that a strategic plan should include with the admonition that any planning should involve all affected groups, and especially cyclists.

5.3 Summary of the FGD Results and Implications for the Bikeways Network

5.3.1 Safety

Not surprisingly, the dominant concern of participants was safety. This was pointed out in the particular case of children on bikes. It was also clear that inexperienced cyclists tended to view totally separated bike paths as a panacea for their fears. The participants also wanted stricter enforcement of traffic laws, particularly those against dangerous driving.

5.3.2 Gender

It was generally acknowledged by most participants that more women should take up cycling especially as they stood to benefit greatly by being able to cycle the short distances that they typically traveled. Girls often give up bicycling when they become teen-agers. And women find it hard to it take up again later.

5.3.3 Social Acceptability

Despite these and other reservations, the participants overwhelmingly endorsed the creation of a city bikeways network. They cited the usual benefits of less pollution, health promotion, and cheap transport. However, they were adamant in wanting to see how the city would put forward its plans and hoped that more public consultations would be forthcoming before anything more was concretized.

Table 3. Concerns and Implications for the Marikina Bikeways Network

Concern	Measure Sought	Practical Implications
Safety	Mix of dedicated bike paths, marked bike lanes, and road sharing schemes.	Dedicated paths -- Riverside Park. Designated streets -- low stress routes including designating Daang Bakal as an exclusive bike corridor. Share the road campaign.

	Program in safety education	Educating cyclists on bike handling, traffic, and road skills -- Effective Cycling seminars & cycling clinics. Integrating bike safety education in schools. Educating MV drivers.
	Controlling reckless, dangerous driving	Enforcement of traffic rules. Consistent application of rules of the road.
	Design of bike network & associated facilities.	Adapt standards developed in other countries to ensure safety in the design of the network.
	Safety equipment	Provide helmets. Study feasibility of helmet ordinance.
Security	Security of cyclists on bike network.	Police visibility on bike network -- bike patrol.
	Preventing bike theft	Provide secure parking facilities.
Taboos against women cyclists	Removing cultural prohibitions against women riding bikes	Consider a program for sensitizing both men and women to issue.
Long term government commitment	Bicycling campaign	Government should draw up a campaign for promoting cycling including transportation demand management (TDM) strategies for reducing demand for motorized vehicles. Appoint a local bicycle coordinator with primary responsibility for promoting cycling and securing cyclists rights.
	Encourage more cycling	Provide incentives/subsidies
	Access to bicycles	Easy credit for purchases. Bike rentals, pooling, coops.
	Maintaining the bikeways network	Pinpoint responsibility in local government.

5.3.4 Remarks

The FGDs made it clear that it will take more than building a bikeways network to increase the incidence of cycling in the city and, even more importantly, to get people to switch from motorized vehicles to non-motorized modes. Specifically, a well-thought-out strategic plan would include the following components:

- a sustained information and education campaign,
- a schools-based bike safety program,
- a cyclist education program
- specific steps and targets for increasing cycling incidence while decreasing motor vehicle use and pollution,
- clear guidelines on resolving road user conflicts, and
- a mechanism to ensure citizen participation in planning and implementation of all related programs.

6. A framework for a strategic plan

As mentioned above, in lieu of a stand-alone bike safety program, the team instead recommended that the city strive to design a process to come up with a comprehensive plan for increasing the incidence of cycling while decreasing motor vehicle use. We emphasized the importance of developing a vision, preferably with a broad sustainable transport philosophy that situates a city bicycle plan within an urban transportation strategy that promotes social equity, environmental sustainability, and economic viability.

We hoped that the city would then take this vision and elaborate on four basic areas for implementing a citywide bike plan. These areas consist of safety, encouragement, engineering, and administration.

6.1 Ensuring Cyclists' Safety

The recommended safety program suggests to the local government to look at two major areas needing substantive action: education, in terms of both training cyclists the basic skills needed to cope with on-street riding and incorporating "cyclist awareness" in drivers' education, and enforcement of road rules for both cyclists and motorists. While the FGD results would suggest a strong clamor regarding totally separate bikeways, doing so would have been economically unfeasible. Even just putting up physical barriers between traffic lanes and bike lanes would have been too costly. The least cost path, but fortuitously also the best one over the long-term, was to teach people on bikes and in cars how to share the road correctly and to discourage errant behavior by strict enforcement of traffic laws.

6.2 Encouragement

Since it was the proffered goal of the bikeways network (and the World Bank facility that would make it possible) to have positive global environmental impacts, it was deemed necessary for the city to encourage behavioral changes. The focused group discussions made clear that one

overwhelming advantage of using the bicycle for transportation was economic. However, the economic advantages were perceived to be mostly benefiting people in the lower income groups, that is, people who were already mostly using public transport. To get people to switch from their private cars, therefore, would need special incentives, both material and financial. Also included in this encouragement component would be special promotional events, such as bike-to-work, car free days, etc., and to target specific groups such as women, students, older people, etc.

6.3 Engineering and Planning

The study recommended that the city should constantly evaluate the bikeways network in terms of its engineering and design. This would not only ensure that the network served users' evolving needs but also that it adapted to the city's own development plans, for example, in integrating the network with the city's planned mass transit facilities. Engineering would also be responsible for pinpointing sections of the network that were problematic and would make appropriate changes to correct these flaws.

6.4 Administration

1. The study also pointed out that the city had to show its seriousness in promoting bicycling by appointing a city official to act as bicycle coordinator to take full-time responsibility for managing the network. This official would also be responsible for monitoring and evaluating the effective of the city's bike plan.

7. Cyclist surveys

As noted above, two surveys were conducted at the time of the preparation of this study. One was a survey of twelve (12) manufacturing companies and was administered by the Marikina City Workers Affairs Office. The other was an on-road survey of 174 cyclists at selected points around the city.[3]

These two studies confirm the general impressions regarding cycling obtained from the FGDs as well as from observation. There is a significant amount of utilitarian cycling within Marikina and providing facilities for cyclists would greatly enhance people's commutes, not the least their safety. This significant base can provide a good foundation for creating a bicycling infrastructure that promises to have multiple benefits for the city's environmental and transport systems. Marikina's experience can be a good model to build on for expanding the network metro wide.

8. Concluding remarks

The construction of the Marikina Bikeways Network is scheduled to be formally started sometime in the middle of this year. The city eventually hopes to build up the fifty-kilometer long network over a period of three years. Parts of the network, particularly the paths along the Marikina River, have been under construction ever since the river park was first laid out a couple of years ago. However, they need to be raised to standards as recommended by the study.

In a situation where all parties have little or no experience in bike planning, it is important to educate both the planners and the implementers. Transport professionals are notorious for their

lack of understanding of the needs of cyclists. Has the associated costs not been prohibitive, the study would have recommended that even on-street bike lanes should be separated from the MV lanes. Because of space constraints, this would have compromised cyclists' ability to maneuver within their lane.

On the other hand, local government officials need to be made aware of the particular needs of cyclists and encouraged to open dialogue with cycling groups to discuss matters that affect them. Pedicabs are often banned on main streets throughout the metro area. The study team agreed that banning them from the bikeways network would defeat the purpose of promoting non-motorized transport. However, it will be up to city officials what to do, in the end.

And, of course, even advocates and bike planners need to be "educated." They need to be able to be "technically savvy" when it comes to bike-related infrastructure design as well as able to reconcile textbook principles and standards with the actual situation on the ground. They also need to develop a sympathetic ear to the public's common perceptions (and misperceptions).

Notes:

[1] from "Inception Report for the Social Dimensions Component of the Feasibility Study for the Marikina Bikeways Project."

[2] The government Department of Transportation and Communications (DOTC) had earlier conducted, with Japanese government funding, a metro-wide urban transport integrated study (MMUTIS) but typically left out bicycle use. Not surprisingly, the study recommended the spending of billions of dollars to build more roads to ease the traffic problem.

[3] I would like to thank Professor Leah Roselle Rivera for allowing me access to the results. For details of the study, please contact Prof. Rivera at the College of Social Work and Community Development, University of the Philippines, Diliman, Quezon City.