

MOBILITY MANAGEMENT Handbook

For Stakeholders



Do you have traffic congestion, frequent collisions, or environmental concerns in your community ?

Mobility Management is a communication-oriented approach that encourages people to change their mobility voluntarily to a more socially and individually desirable direction.

Effective improvement

Transport infrastructure development and service improvement



Continuous improvement

Continuous communication such as sharing results and new improvement

Providing customized information

Using public transport more often

Traffic congestion Collisions

Environmental concerns

Improving your skill

MILLIN

Reduce traffic congestion and collisions and improve the environment to create better communities.

Giving feedback and participating to activities

Point

Point

Continuous MM leads to virtuous cycle.

Continuous MM activity can contribute to infrastructure and service improvement of public transport. Also, it can transform people to become more caring about their communities.

Even just providing information has effects on people's behavior

Dissemination activities at events



Point Stort with a small

Start with a small-scale activity

Small-scale activity with limited time and budget can have effects on people's behaviour. Just providing well-customized information with good timing is enough.



Providing information and collecting feedback by home visit



Introduction

Transport policies addressing these issues have been implemented in various countries

In many cities in countries experiencing rapid urbanization and motorization, there have been issues such as congestion, frequent traffic collisions, and environmental concerns caused by too many cars and motorbikes on the road. As a countermeasure, various transport policies have been implemented including the development of road and public transport infrastructure such as MRT and BRT.

Infrastructure development is not the only solution

Is public transport in your community well-operated and used to the satisfaction of many people?

The mere availability of public transport does not ensure significant ridership. In cities around the world, people may not even be familiar with the bus operation schedule, or worse, may not have a positive image about public transport.

Low of public transport ridership reduces theoperation efficiency, leading to service level deterioration. This affects development plans for public transport, for example, an approved master plan awaiting implementation.

People can be biased, depending on their preferences or the information they have, when making a choice under certain circumstances. Such a decision tends to be short-sighted and individualistic, which can transform into a new routine that could then be difficult to change.

This can be the main reason why people do not use public transport contrary to the expectation of authorities or public transport operators.



Traffic congestion in Dhaka (Bangladesh)

Communication is a key in problem solving

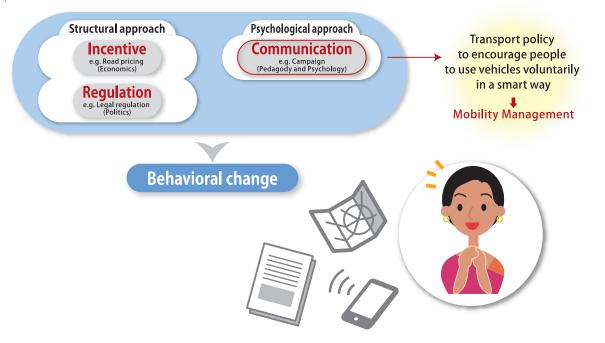
→ Mobility Management

People's decisions seem to be influenced by **incentive**, **regulation**, and **communication**, all of which should be covered to have an effective policy to for influencing and changing travel behavior.

"Communication" is used effectively in addition to conventional policies of "incentive" and "regulation."

It is important to change awareness or understanding about public transport for those who may use it, which is a core concept of Mobility Management as implemented throughout Japan and various other countries such as in Europe. Depending on the intended target, information or advice on the use of public transport should be customized and provided.

A well-designed communication strategy can change travel behavior and potentially help to improve the service of public transport and expand its network. Mobility Management has recently also been implemented in developing countries, as even small-scale activities can have benefits.



Let's make

a better transport environment through Mobility Management!

What is Mobility Management?

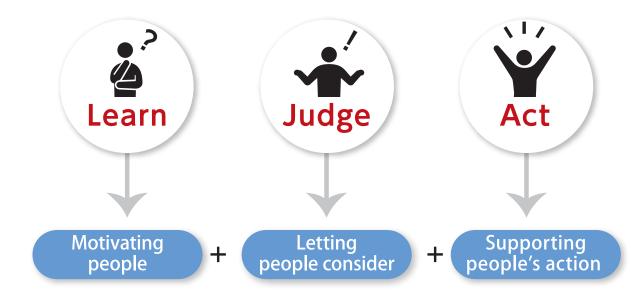
Providing customized information about public transport carefully

Mobility Management (MM) is a communication-oriented approach based on providing customized information.

MM aims for people to have a wider perspective and make better decisions fore society, which can be achieved by providing well-customized information according to the target user.



- ·Dealing with awareness, recognition, judgement, and behavior.
- •Customizing communication based on the target persons or institutions.
- Continuous communication through sharing results and giving feedback to improve awareness, perception and behavior.

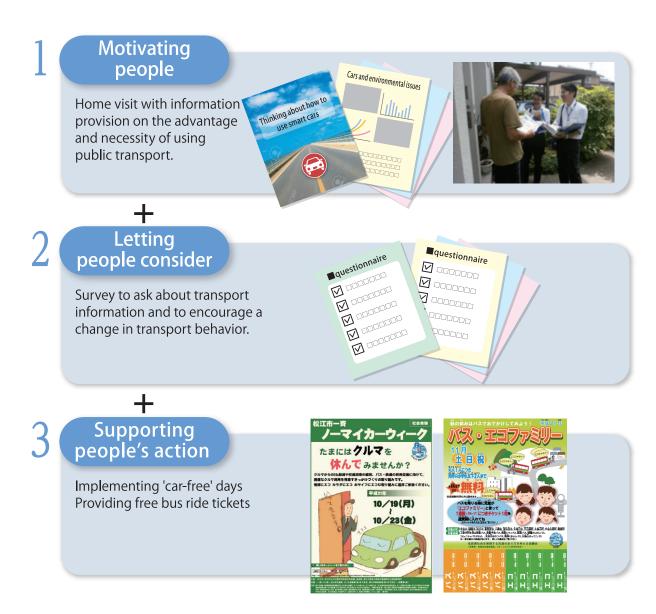


Communication for "Motivating people", "Letting people consider", and "Supporting people's action" can be combined and applied to influence "Learn", "Judge", and "Act", leading to people's behavioral change

MM communication consists of motivating people, letting people consider, and supporting people's action.

Among various communication approaches, providing information through brochures and interview/survey by home visits can be effective and be carried out easily by government officers or public transport operators.

%Please refer to "Mobility Management for Practitioners" (Chapter 3) for more details about Communication Questionnaire and Travel Feedback Program.



Continuous communication is key by providing results and further information through workshops or social media.

Depending on the problem you want to solve

arget and approach depend on the problem you want to solve.

To effectively improve the area of concern, it is important to clarify the goal, the information contents and the target, all based on the problem. For example, the target can be residents, workplaces, and schools (other places can also be a target depending on the problem.)



Example 1. To alleviate congestion around the city center →MM Workplace

Providing information and conducting surveys to employees of workplaces who may use the congested area for commuting trips (the target), including those in-charge of employees' transport administration.





Example 2. To improve ridership for a particular public transport route →MM Residents

Providing information and conducting surveys to those who reside in the area along the route.





Example 3. To create a habit of using public transport in the long term →MM School

Educational activities on the use of public transport can be carried out in school as part of the curriculum.



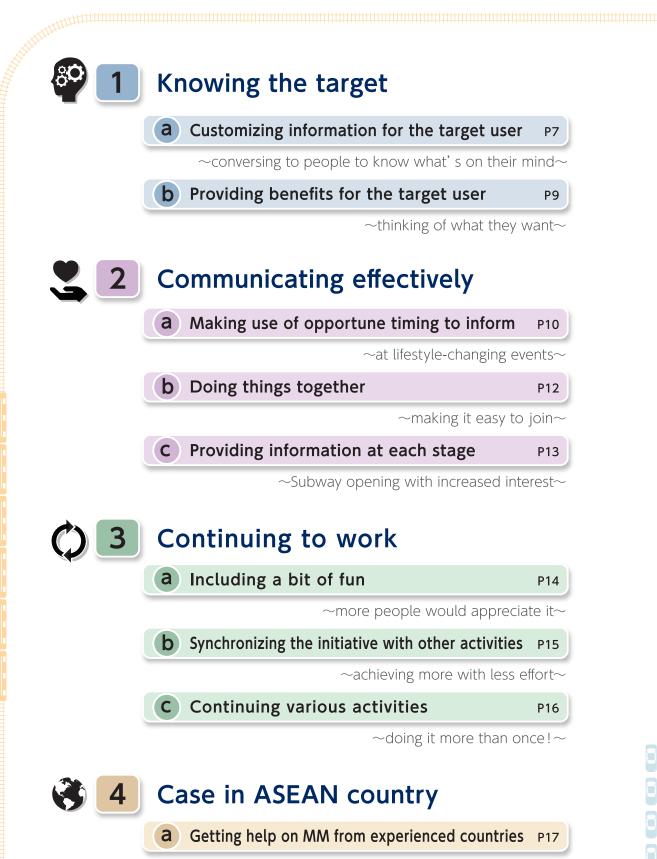
Tools tailored for the target users, at an opportune time for behavioral change, with incentives for taking action are important.

Specialized knowledge or technique is not necessary. → Just clarify the target and customize the message!

You can start from tomorrow

Let's see some good examples!

Mobility Management is communicate customized from the perspective of the target user. Below are some examples from Japan and other countries.



 \sim the case of Binh Duong in Vietnam \sim

 \sim conversing to people to know what's on their mind \sim

Ocustomizing a map for workplaces (Japan/Uji City, Kyoto Prefecture)

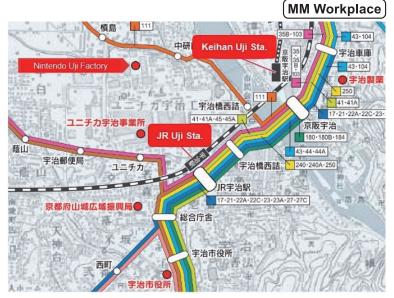
Many workplaces are located in Uji, Kyoto Prefecture, including Nintendo's factory. In this area, even though public transport is highly convenient with multiple railway lines available, there had been a problem with traffic congestion caused by commuters driving during the peak hours. Under such circumstance, Kyoto Prefecture aimed to curb commute trips by private cars through MM. After analyzing the cause of such a situation, it was found that the commuters did not know information about public transport, and those who owned cars just drove without a second thought. With various office locations, the project attempted to provide information on commuting by public transport, which were customized for each office.

Knowing the

target

Copies of the Uji area commuting map were distributed to approximately 4,400 people. This map presented the timetable and walking time for using public transport to commute. (The Nintendo Uji factory is shown as an example here.)

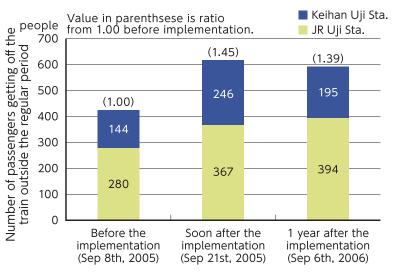
As a result, the number of non-commuter-pass passengers from 7 to 8 A.M. increased by 45%. The traffic volume around the offices during commuting hours decreased, and the traffic congestion period was also shortened. This effect continued even one year after the map was distributed.



Commuting map for Nintendo Uji factory



Access information for Nintendo Uji factory (Kyoto Prefecture, 2005)



Change in the railway ridership

○Receiving feedback from residents to create a map (Japan / Kawanishi City, Hyogo Prefecture)

MM Resident

Kawanishi City, in Hyogo Prefecture, was developed along the railway and highway as a residential area for people commuting to Osaka and Kobe. As car traffic worsened, TDM measures such as Park-and-Ride facilities were implemented. However, the government thought this approach alone would not change the situation. MM was thus carried out to raise the local residents' awareness that public transport could be beneficial in alleviating traffic congestion.



The activity involved close collaboration with the local residents, who gave

(Kawanishi City, 2005)

inputs in workshops to create a map that was easy to understand from their perspective. The map became more useful by having facility information such as hospitals and schools, and having the districts colored. Copies of the map were later distributed to all the residents.

As a result, the average vehicle usage time over three days, of 10 people who participated in the questionnaire, was reduced by 71%. Furthermore, positive feedback about the activity was received from many of the participants, leading to continuous MM activities.



OHome visit approach (Australia/Cockburn) MM Resident

Cockburn is a city located in the Perth metropolitan area with a population of 2 million. As this metropolitan population is expected to increase in the future, public transport development including railways and buses in Cockburn has been planned. Parallel to this infrastructure development, MM for local residents was conducted to promote travel that does not rely solely on the use of private cars.

Because the target area was so broad that the travel characteristics differed between households, it was difficult to provide the same information to the residents collectively. Therefore, the **home visit approach**, in which staff visited each household directly to provide effective information through conversation, was



MM by home visit

(Your Move Cockburn, 2014)

carried out. The approach consisted of 3 steps:

- 1) Notify the implementation of the program in public places,
- 2) Confirm the intention to participate in the program by telephone,
- 3) Visit the households who indicated their intention to participate,

and directly propose a travel plan suitable for each household.

As a result, over 10,000 households participated, reducing the use of private cars by 5%. It was also confirmed that 60% of the people who participated intended to refrain from using their own car even after the activity.



 \sim thinking of what they want \sim

OProviding health information to middle-aged people (Yamato City, Kanagawa, Japan) (мм workplace)

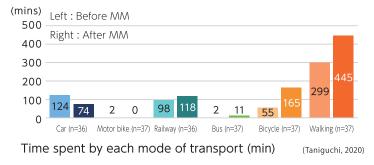
In Yamato City, Kanagawa Prefecture, public transport is well developed with three railway lines, and many citizens use these to commute to Tokyo and Yokohama. However, as the city reflects the country's situation of an ageing population, Yamato City also aimed to keep senior people healthy and thus lower the social insurance costs. For this reason, Yamato City carried out MM to promote the use of public transport for public health improvement, targeting people over 40 years old who had issues during their medical checkup.

Knowing the

target

Yamato City distributed materials, such as a motivational brochure and town tour guide, that listed health information and displayed walking maps, advocating that going out by public transport involves an adequate amount of walking for pre-

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Number of Steps	Preventable diseases
10,000 steps/day	Metabolic syndrome
8,000 steps/day	high blood pressure / diabetes
7,000 steps/day	Osteoporosis / Cancer
5,000 steps/day	Dementia / Heart disease / apoplectic stroke
4,000 steps/day	Depression
Motivational information (Yamato City, 2	



venting certain diseases. As a result, the hours spent traveling by bus and bicycle increased among the participants, leading also to the improvement of health indicators such as body mass index (BMI).

Commendation for workplaces by the local government (Japan/Okayama City/Kurashiki City, Okayama Prefecture)

(MM Workplace)

Okayama City and Kurashiki City, located in the center of Okayama Prefecture, form the Okayama Metropolitan Area which has a population of 1.5 million. Although there is public transport available in these areas, road congestion had become chronic mainly during commuting hours. Thus, MM activities were carried out in both cities.

The main cause of traffic congestion in this area was the reliance of private cars for commuting. Since it was difficult to reach the commuters directly, **MM was implemented through their workplaces.**



Commendation by the major

(Kousei Hospital, 2017)

Employers were invited to participate in an

activity campaign called Smart Commuting Okayama, being held in October every year for one week, encouraging employees to use public transport. **The mayor gives awards to companies who make remarkable efforts**. Although there is no prize money, the award effectively draws out the motivation of participants. The companies are incentivized to use this award as a Corporate Social Responsibility (CSR) initiative. Communicating effectively

 \sim at lifestyle-changing events \sim

\bigcirc Providing information at the time of moving in(Japan / Takasaki City, Gunma Prefecture, Sendai City, Miyagi Prefecture) **MM Resident**

Sendai City, in Miyagi Prefecture, is the most prosperous city in Japan's Tohoku region, and thus there are many people moving in from the neighboring prefectures. Similarly, Takasaki City serving as a business hub in Gunma Prefecture, is also seeing an increasing number of people moving in. In these areas, traffic congestion had become a more serious problem as the population expanded.

For this reason, MM activities were implemented to promote the use of public transport for people moving in these areas. Compared to local residents, newcomers have less knowledge about public transport and are





Brochure to newcomers at Sendai City Hall (Sendai Smart, 2012)

Brochure by Takasaki City (MLIT, 2007

less likely to have decided on their transport method, so it would not be hard for them to adopt the use of public transport if appropriate information could be provided. Thus, useful information such as a public transport map has been provided actively at City Hallfor those who visit for residency registration.

As a result, more than 90% of people in Sendai City who were covered by the activity answered that the information was useful. Meanwhile, in Takasaki City, bus and train use was 3 times and 2 times more likely, respectively, by those who received the information were 3 times and 2 times higher, respectively, than those who did not.

\bigcirc Providing information during high school enrollment (Japan/Ibaraki)

Ibaraki Prefecture has a high modal share of driving and an insufficient public transport system, so there was the issue of certain demographic segments, such as the elderly and schoolchildren, who cannot drive having a hard time travelling in the area. Stabilizing public transport management by increasing revenues from ridership has been another challenge.

Given this situation, one approach was to focus on high school students who cannot drive a car. In this area, many students live far from school, and in some cases they rely on their parents to drive them to and from school. Therefore, Ibaraki Prefecture decided to promote the use of public transport by conducting MM during high school enrollment, which seems to be a time when students have not yet decided on the mode of transport to use. It is not an exaggeration to say that students' choice of mode of transport at this stage will affect the frequency of public transport use in the future. Leaflets that describe the various benefits of using public transport from the perspective of high school students, such as being able to use one's smartphone and be more social, distributed.

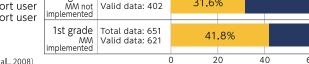


Leaflets for the students (Ibaraki Prefecture, 2018)

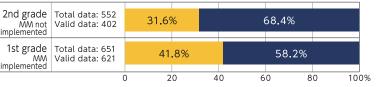
As a result, the proportion of students commuting to school by public transport in freshman year who received the information were about 1.3 times higher than those in sophomore year grade who did not receive the information.

Proportion of use/non-use of public transport

Public transport user Non public transport user



(Taniguchi et al., 2008)



OProviding information during license renewal course (Japan/Kyoto)

Kyoto City, in Kyoto Prefecture, characterized by a large population and high number of tourists, has a well-developed public transport system. However, other parts of the prefecture do not have a sufficient public transport network, which is also faced with decreasing ridership. In order to maintain service, the number of public transport users must be maintained, as it affects the service level such as the number of routes covered. Hence, it was necessary to raise public awareness of the benefits of public transport.

Driver's license renewal was recognized as an opportunity to introduce MM, because a separate budget would not be required to reach the drivers themselves. In addition to the existing materials for safety awareness, such as charts on traffic accident risk locations, the participants were provided with information on health so they would rethink about solely relying on driving.

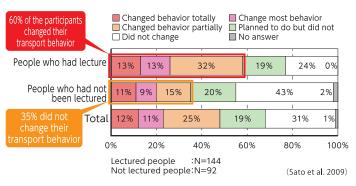
A survey conducted after people had their driver's license renewed at a test center in Kyoto City revealed that about 60% of the participants drove less frequently because they increased their use of public transport. In addition, it was found that over 30% of their family members who did not take the class directly (but were given questionnaires) changed their transport behavior. This activity successfully reduced the cost for a more extensive implementation by combining MM with an existing activity, with a cost-effectiveness rate (B/C) of 21.5, as well as improved public health.

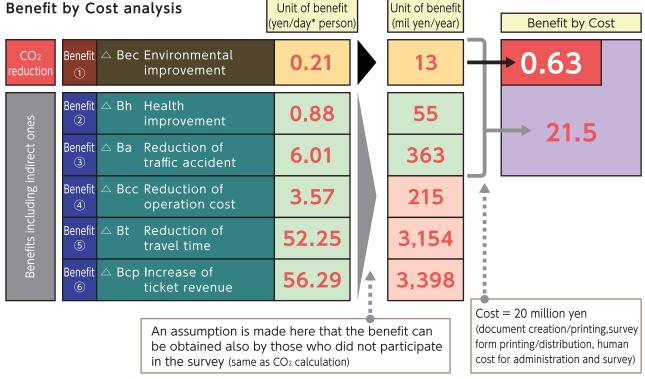


Driver's license renewal course

(Tsuchizaki et al., 2011)

MM Resident





⁽Sato et al. 2009)



 \sim making it easy to join \sim

\bigcirc Taking advantage of weekend family events (Japan/Kyoto Prefecture)

Bus ridership was low in some municipalities in the southern part of Kyoto Prefecture (south of Kyoto City), with some households not riding the bus at all. For that reason, MM for households with elementary schoolchildren was implemented to provide opportunities for families to consider riding the bus.

To encourage the families to use the bus, free tickets for their respective target routes were distributed to those with up to two children in elementary school or younger, accompanied by one adult.

survey done on the parents who used the tickets showed that nearly 70% of the users switched from cars to buses, and more than 30% said they would use the bus more often than before. The awareness about public transport had risen by providing the actual experience of using it.



Poster of the campaign

(Kyoto Prefecture, 2009)

ODeclare and act together! (Japan/Matsue City, Shimane Prefecture)

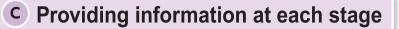
Matsue City, in Shimane Prefecture, had 82% of commute trips being done by driving. This high modal share of driving was due to weather, such as heavy rain and snow, as well as the low level of public transport service in the city. Too many cars on the road caused traffic congestion especially during commuting hours. In order to alleviate the chronic traffic congestion in the entire area, MM was carried out for workplaces in the city.

To raise awareness and momentum at workplaces, the local government created a campaign system called "Matsu Eco Declaration", where **participants can declare specific goals** such as "30% reduction in car commuting" and then commit to achieve these. For the companies, the incentive for declaring was that they would be published as cooperating companies in the local government's public relations magazines.



(Matsue City, 2009)

As a result, the duration of traffic congestion during commuting hours was reduced. In addition, there is a strong tendency for workplaces that have made the declaration to continue with their campaign activities.



~Subway opening with increased interest~

○Various MM activities for the new subway opening (Japan ∕ Sendai City, Miyagi Prefecture)

MM Public Transport

Sendai City in Miyagi Prefecture was aiming to create a compact city centering on public transport such as railways and buses for the sustainable development of the city. As a part of this plan, the construction of a subway system was planned to run through the city center. Therefore, in order to create interest in the project, raise expectations, and promote the use of the subway after its opening, public relations was carried out in conjunction with the progress of the project.

Communicating

effectively

From the preparation stage of the project, the route and station locations were made public on the website to raise public awareness and interest in the project. In addition, publicity was carried out through the website and events to deepen citizens' understanding of the project at the beginning of the project, and to foster a sense of expectation during the construction phase. During the construction phase, we also provided opportunities for students from local neighborhood associations and schools to visit the subways under construction and see them firsthand in order for them to become attached to them. These tours also included the distribution of materials and educational items, and



Tunnel visiting event

as the opening of the subway line approached, they increased the number of site visits.

One year before the opening, the project started not only to provide information as public relations and PR activities, but also to carry out programs with a high level of citizen participation. In this project, citizens took the lead in planning the contents of the opening events and lending their photographic equipment for events in which they participated, thereby increasing the number of citizens participating in the projects. They tried **to improve the mood of the subway's opening** by having the citizens who participated in the events before and after the opening disseminated the information.



Rolling stock visiting evet



Opening event by the citizen

(Sendai,2016)



Continuing to work

a Including a bit of fun

 \sim more people would appreciate it \sim

⊖Rogaining

The metropolitan area of Hiroshima has several world heritage sites such as Miyajima, and public transport is well developed to facilitate tourists' travel.

To further promote the use of public transport, MM was **designed to imitate the enjoyment of a game**. The activity, named "Photo-Rogaining," has participants riding public transport while scoring points. The activity included route research by using a search tool, expecting that people learn the benefit of using public transport by experiencing it firsthand.

As a result, more than half of the participants surveyed afterwardsanswered that public transport was "more convenient than expected", and more than 70% said that their interest in public transport increased. MM Resident



What is "Photo Rogaining"?

Each group go around designated checkpoint in the area by using public transport, and get score by taking photo.

Each group visit as much checkpoint as possible, and compete the score

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\bigcirc Learn the importance of public transport through the Sugoroku game

MM School

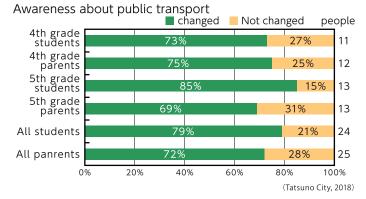
Many children, including elementary school students, have few opportunities to choose their modes of transport, or even just to think about these. Since it is important for children to have a better understanding of public transport from a long-term perspective, MM activities in elementary school classes have been widely done. The class incorporates board game experience where students can understand the difference between driving and riding public transport, and the effect of their choice of transport mode on the city and the environment.

According to post-survey results in Tatsuno City, Hyogo Prefecture, about 80% of the students answered that their awareness about public transport had changed. In addition, about 70% of their parents answered that **class experience encourages a discussion of public transport at home**, leading to increased awareness by the parents.



MM School activity in Binh Duong

(JICA, DOT, 2018)





Continuing to work

Synchronizing the initiative with other activities

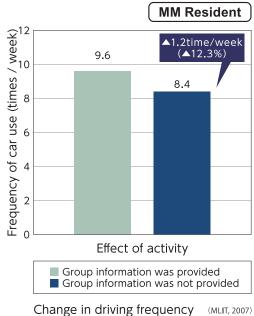
 \sim achieving more with less effort \sim

Collaboration with regular traffic survey (Japan/Fukui Prefecture)

The decreasing population of Fukui Prefecture had led to the decline in public transport ridership. Furthermore, there had been a concern that the dependency on driving as transport mode could increase due to the lower service level of public transport caused by the decline in the number of passengers. Meanwhile, the finances of the local government had become tight due to the shrinking population, making it more difficult to secure a budget to solve these issues.

Fukui Prefecture carried out a cost-effective MM survey by combining it with the person trip survey that the central government regularly conducts. By adding questions about travel behavior in the survey, the cost of the MM survey was reduced. For those who agreed to participate in further MM activity, information regarding public transport was provided.

As a result, the group who received information on public transport drove less often, by 12%, when compared tothose who did not receive the information.



Collaboration with social studies education in elementary school (Japan/Sapporo, Hokkaido) (MM School

Except in the central area, driving is the dominant mode of transport in Sapporo City in Hokkaido, due to an insufficient public transport network and heavy snowfall in winter. However, public transport is indispensable, and thus should be used in a smart way while having cars. Accordingly, Sapporo City decided to incorporate **MM activities in elementary school classes** to encourage the students to think about the need for public transport at an early age.

The issue in holding the activity was that it would be too expensive to continue the classes while outsourcing the lecturing to experts. Therefore, teachers were provided with materials and supplementary books on public transport, so that **they could conduct their own lessons and carry out MM** efficiently and sustainably.

As the number of teachers who can implement MM education increased, both the quantity and quality of MM activities have expanded, such as having a more varied curriculum for social studies class. In addition, not only did the children who took the classes had a significant change with their intention to use public transport, but also their parents.





Class in the elementary school

(Sapporo City, 2014)

Continuing Continuing various activities

 \sim doing it more than once ! \sim

Continuous and comprehensive activities (Japan/ Kyoto City, Kyoto Prefecture)

Kyoto City in Kyoto Prefecture, with a population of about 1.5 million, welcomes a high number of tourists from abroad, as well as from other parts of the country. There had been chronic traffic congestion around major sightseeing spots due to limited road capacity. Meanwhile, the modal share for public transport had been in the decline, partly because the tramways discontinued their services due to rise in motorization.

MM activity in Kyoto City was led by the mayor, who made a pledge to address the issues, and who involved various stakeholders including the citizens and transport operators. In parallel with infrastructure development, such as having a new bus line, various activities were carried out for residents, workplaces, and schools. Throughout these activities over time, experiences were gained and improvements were made, making MM more efficient in solving issues. This also resulted in more engagement of the citizens, creating a virtuous cycle.

to work

As a result, about 60% of the entire population received or experienced MM messaging over four years of activity implementation, which resulted in more than 19,000 citizens expressing their commitment to refrain from driving. Moreover, these continuous activities achieved a drop in the modal share for cars from 28.3% to 24.3% over ten years, along with significant profit improvement in the bus operation in Kyoto City over the years.

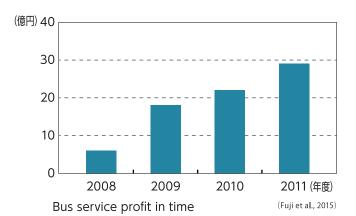


(Kyoto City, 2016.3)



MM in the elementary school

(Kyoto City, unkown)





Promotion event for operation schedule change (Kyoto City, 2016.4)





a Getting help on MM from experienced countries

 \sim the case of Binh Duong in Vietnam \sim

OMM in ASEAN country supported by JICA(Vietnam/ Bing Duong)

Binh Duong province in Vietnam, locatednorth of Ho Chi Minh City, had a population of 1.7 million that was projected to increase further due to proximity of said province to the largest city in the country. In order to cope with this increasing population trend, the province created a new capital city, 10 km from Thu Dau Mot. The new bus service connecting the old city and the new city achieved merely 1% modal share in the province, and thus MM activities were planned to increase the ridership, which turned out to be the first attempt to apply MM in an ASEAN country.

Case in ASEAN

country

Since there was no local expert who had MM experience, local staff were sent to Japan for training and to gain relevant knowledge. The trained staff carried out four types of activities in the communities: MM workplace for the local government, MM school for universities, MM residents for those living along the bus route, and MM education for how to ride the bus. In parallel with these activities, other transport measures were implemented including bus service improvement and Park & Ride facility installment.



(BECAMEX TOKYU, unknown)



MM workshop in the workplace

(JICA, DOT, 2018)

It has been proven that MM activities can also be effective also in a developing country, as the monthly bus ridership in the sample survey increased from 5 to 9. The Binh Duong case also illustrates the fact that transport infrastructure does not have to be completed for **MM activities to be effectively carried out, when the knowledge is in place and the target clarified.**



MM in the elementary school

(JICA, DOT, 2018)



Park-&-Ride facility

(JICA, DOT, 2018)

Conclusion

Start from what you can do.

Mobility Management (MM) = The first small step to create a better community.

Most of the examples occurred in Japan, thus there are adjustments to be made so that messaging can be effective for your community, including information customization, appropriate timing, and adoption of merits or incentives that are effective to your community. As previously explained, this can be carried out through careful communication, depending on the target users, with small improvements that anyone can come up with.

Encouraging people to use public transport more often through MM can also contribute to transport infrastructure development, which can be considered as synergistic effect. MM is not only for increasing passengers of public transport and alleviating traffic congestion, but more so for creating public transport-oriented communities that can possibly change the lifestyle of a community.

Visioning and lifestyles differ among communities, and there are various ways to start MM such as providing information on how to ride and develop public transport, which can be the first step for a better community. You may start from what you can do, and then develop activities while making small improvements.

Your skill to be developed

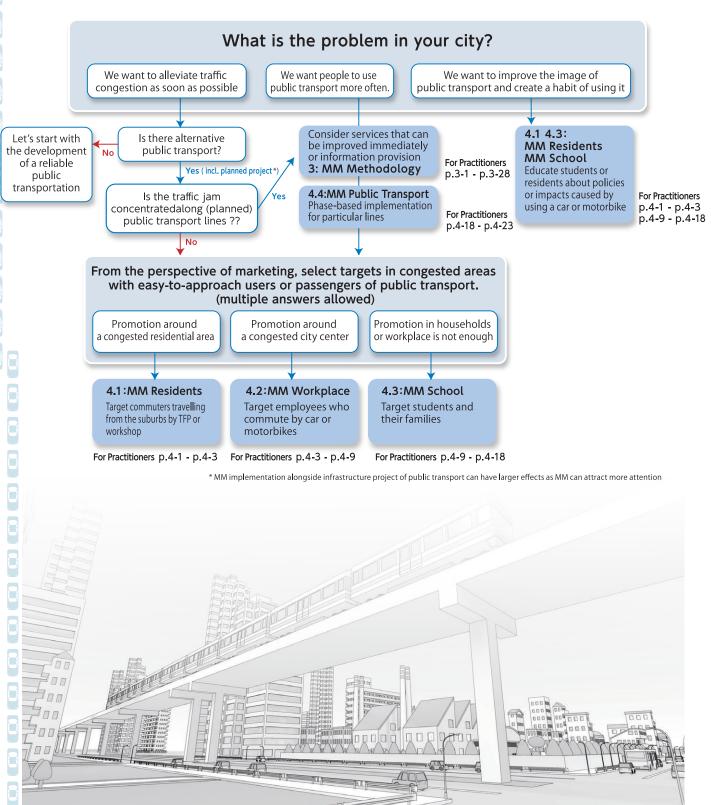
Mobility Management (MM) is good not only for communities but also for yourself. Below is are ways in which MM can develop your skill in community development.

- To think about the benefit of using public transport and how good it is to encourage the use of public transport for the community's future.
 - Becoming more aware of why you work for community development
- To coordinate with stakeholders, engage by trial and error, and enable improvements depending on the target for the change of behavior.
 - Being able to put yourself in other's position so that coordination between stakeholders having different interests can succeed
- To collaborate with various stakeholders, such as transport operators and companies, for a project to be successful
 - Developing communication and business networking skills for project management
- To publish research papers with MM professionals about activities, findings, and results
 - Adding to your career achievement and global network in community development research

Please consider Mobility Management as transport policy for your community!

Do you want to know more about MM and try it out?

You can read the complete version of the handbook Mobility Management for Practitioners, which provides more useful and detailed information to enable implementation of Mobility Management. The flowchart below will guide you use the handbook.



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