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# The Case Study of Public Involved Project for Road Safety in Residential Area

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**Synopsis**

For the last decade, the number of fatal accidents has decreased due to various measures based on the scientific approaches. On the other hand, the number of traffic accidents is still increasing. Therefore it must be necessary to consider a new viewpoint like the public involvement.

In this study, we try to propose a typical process and major problems of the public involved project for road safety based on a case study mainly operated by members of PTA. As a result, the characteristics of the consultation type approach in comparison with the former scenario type approach were distinguished. Furthermore, we could conclude that it is necessary to choose more proper type approach according to the area characteristic. However, in order to give the knowledge of appropriate approach, it should be essential to accumulate more case studies.

KEYWORDS: Road safety, Public involved project, Partnership, Scenario type, Consultation type, Education for road safety

## 1. Introduction

The number of traffic accidents has increased according to the increase of car ownership enhanced with the progress of motorization in the late 1950s. And 1970, the number of killed people in traffic accidents reached about 16,800. After that, in the early 1980s, it decreased to about 8500 persons correspond to the half of the peak, due to the abundant supply of road facilities including safety measures. However, in the late 1980s, the number of traffic accidents began to increase. In the last decade, although the fatalities fell below 10,000 people, the number of both traffic accidents and the injured are still increasing.

In these circumstances, it should be necessary to consider a new viewpoint like the public involvement project. Therefore, in this study, the typical processes and major problems of the public involved project by the partnership of administration and residents, especially members of PTA, should be considered through a case study in Amagasaki City, Hyogo Prefecture.

## 2. Outline of case study

### *2.1 Basic idea*

In some European cities, for long time, many trials have been introduced to establish the public involved activities for agreement on public works. For example in England, the remarkable decrease of traffic accidents has been achieved due to such activities.

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Also in Japan, after 1990, the system and legislation for public involvement in public works began to introduce based on the revised Local Autonomy Law. On the contrary, residents generally feel a great interest in the road environmental issues, especially the road safety problem. Therefore, a public involved project should be effective in improving the road environment. However, the basic processes and major problems like the characteristics in locality were not revealed. That is, it should be to accumulate more experiences of these projects.

### *2.2 Process and viewpoint of research*

This study followed from the experiences of road safety projects[1), 2)] executed from 1999 to 2001 in Kakogawa area of Hyogo prefecture. In these projects, the development of new measures based on the cooperation between the administration and the manufacturing company was attempted. And also, in another case, the safety measures were introduced by the public involvement approach. Then we intend to extend these projects to the activities involved children through an activity of PTA. As a result, in "Kanki Area" of Kakogawa City and "Tanou Area" of Amagasaki City, the case study of the activity mainly managed by PTA were stated in 2003. But the former changed to the activity limited to the investigation of safety for school zone, based on the cooperation between the administration and PTA, because of the difficulty in the cooperation between PTA and the neighborhood association. Therefore in this research, the latter was chosen as the case study. Here, we can point out the significance of consideration for the characteristic of community activities.

### *2.3 Activity organization*

In order to realize the activity mainly not only operated by members of PTA of "Sonowa-kita" primary school, but also supported by the neighborhood association including the community of the aged, the activity organization was proposed as shown in **Figure-1**.

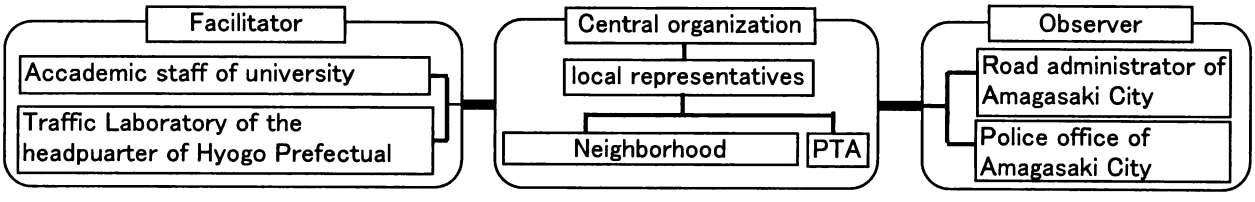


**Figure-1 The composition of the activity organization**

## 3. Contents of activity

### *3.1 Outline of activity*

In the public involved approaches, it should be necessary for members of each organization to achieve the better partnership due to independently role. Therefore in this case study, major activities were devised to be operated by each organization, as shown in **Figure-2**.

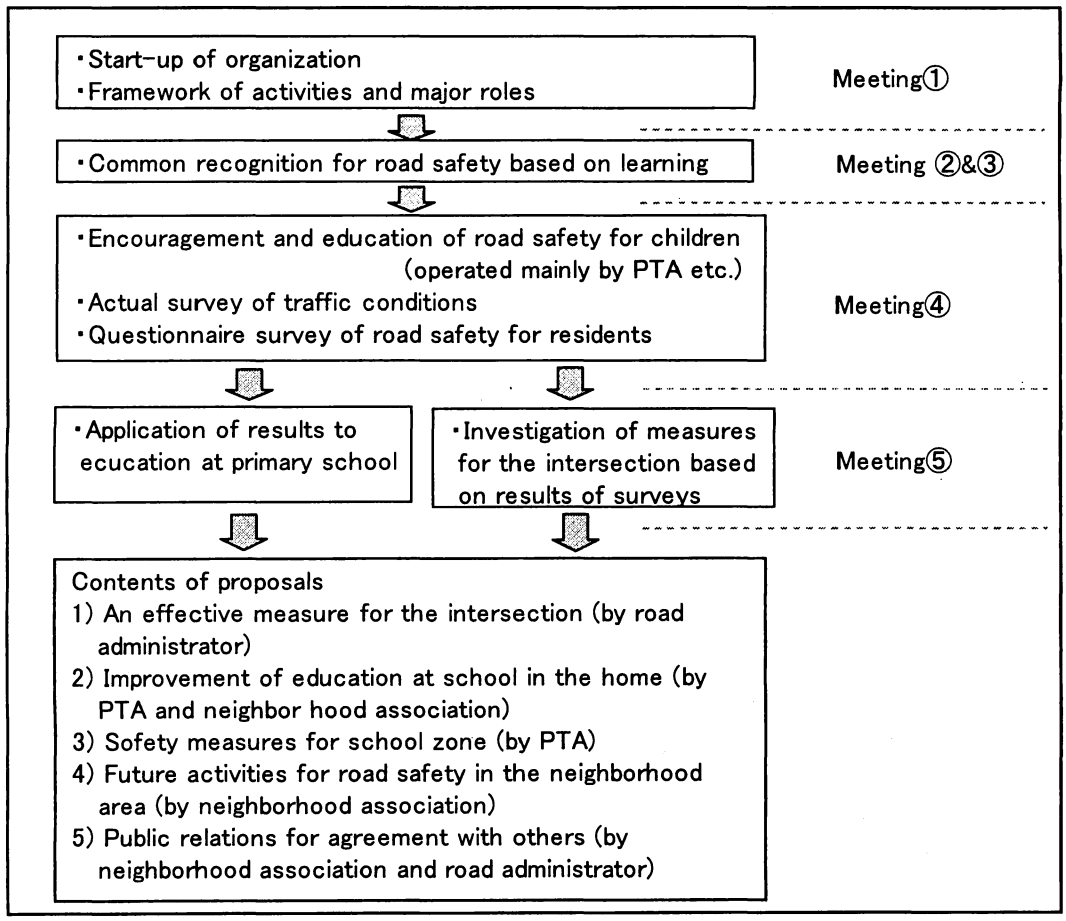


**Figure-2 Framework of activities as the case study**

### *3.2 Major results of each activity*

*(1) On-the-spot investigation*

From arranging opinions of participants by KJ method, two major problems were clear as follows.

1) Congestion caused by the poor signal synchronization at the target-intersection

2) Risk for crossing pedestrians due to the short length of green light

It should be important for this process to realize the common recognition for road safety.

*(2) Questionnaire survey for children*

This survey was designed to reveal the safety consciousness of both children and parents, by members of PTA. From this survey, for example, the frequency of dangerous experience exposed at the target-intersection was obviously different, according to the area of respondents, as shown in **Figure-3.**

Finally, it may be expected to encourage children to safer behavior, through meeting about these results at the lesson of primary school.

*(3) Traffic conditions at the target-intersection*

The traffic investigation at the target-intersection was executed in cooperation between members of PTA and our staffs. As an example of these results, the ratio of cycles of signal when arrival vehicles were not completed to pass is shown in **Figure-4**. Thus, it is clear that there may be the room to improve the signal condition at the peak time of morning and evening.

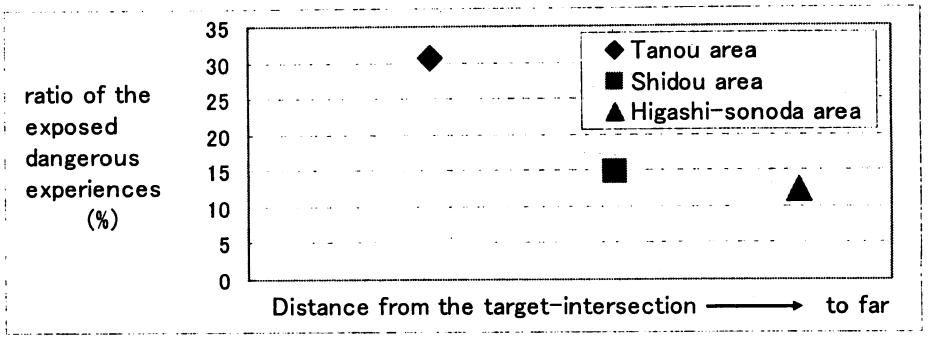


**Figure-3 Ratio of the exposed dangerous experiences according to distance from target -intersection**

In addition, various actual data, such as traffic volume according to each traffic participant, crossing situations and so on were obtained. It should be useful for this activity to deepen the knowledge for road safety. Concretely, the following opinions and impressions were pointed out from members of PTA.

1) Recognizing of too many vehicles at the target-intersection

2) Necessity for improvement of consciousness for road safety

As a result, not only the problems of the target-intersection but also the effects of learning to understand the method of the survey were shown by this activity.

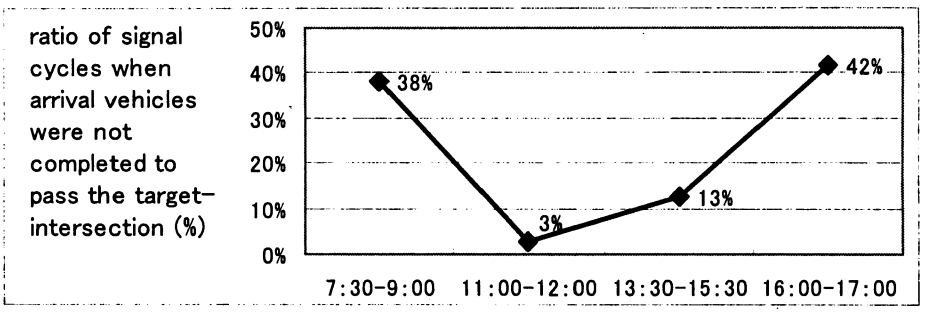


**Figure-4 Ratio of signal cycles when arrival vehicles were not completed to pass the target-intersection**

*(4) Questionnaire survey for residents*

Questionnaires were distributed and collected in cooperation between the neighborhood association and the community office of city. Here two examples of the results are shown in **Figure-5** and **Figure-6**. From these figures, it may be considered that not only the degree of interests for risk of the target-intersection, but also the understanding of hazard factors should be different, according to the location of residence. These results may be possible to promote better understandings for road safety activities.

*(5) Other activities*

In addition to the above actives, members of PTA investigated the past and present conditions of the school zones, and the city officers arranged information on the cost and term of public works for road safety. These activities also may help to achieve better partnership between members of the neighborhood association and the administrators.

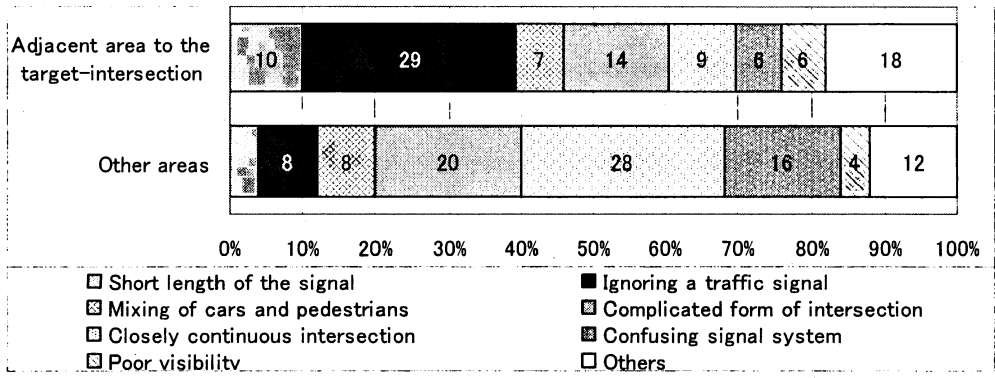


**Figure-5 Ratio of hazard factors**

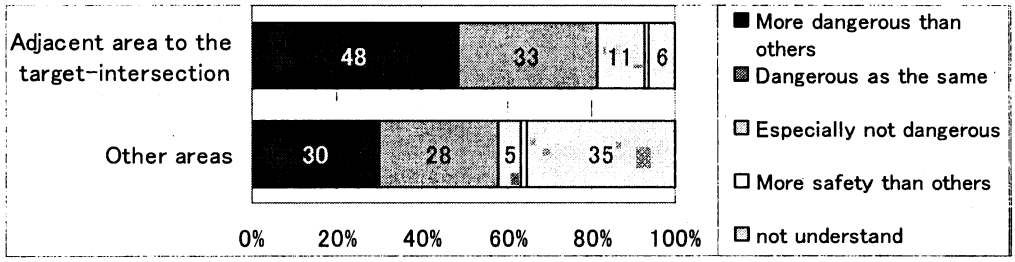


**Figure-6 Degree of danger of the target-intersection**

## 4. Evaluation of public involved approach and through a case study

In this study, the consultation type process was introduced based on the experiences of the scenario type approaches of a couple of results of former case studies. Then the difference of each characteristic is shown in **Table-1** in comparison with the former case studies.

In the scenario type, as member's consensus was given to priority according to the process predetermined to a scenario, it may be easy to achieve some specified targets. On the other hand, some devices should be necessary to encourage each member to independently and aggressively involve the activity.

In case of consultation type, it must be expected that each member can find some fulfillment according to the responsibility for deciding the way of activities. On the other hand, some devices should be necessary to continue the activity, because it may take a long time to achieve some results through trial and error. In this case study, some members pointed out the importance of continuation and increase of participants, through a questionnaire for members.

As a result, we can conclude that it is necessary not only to choose these properly by the area characteristic, but also to accumulate some cases in order to give the knowledge of appropriate approach.

**Table-1 Comparison between scenario type and consultation type in the public involved approach**

| Factors of activity | Scenario type | Conference type |
|---|---|---|
| Motivation for activity | Facilitation by academic staffs | |
| Organization | Administrator + coordinator (Residents participate as members ) | Consultation of resident members including PTA (Administrator participates as an observer) |
| Policy | According scenario | According to consultation |
| Expected results | Predetermined | According to each activity |
| Degree of involvement | Participation and passive learning | Involvement and independent learning |

## 5. Concluding remarks

In this study, we proposed a typical process of the consultation type project of the public involved approach for road safety in based on the experiences of some projects for the scenario type projects, through the case study mainly operated by members of PTA.

As a result, the characteristics of the consultation type approach in comparison with the former scenario type approach were distinguished. And also, we could show that some useful results to not only improve the safety of the target-intersection, but also progress the public involved approach were obtained as follows.

1) The condition of the target-intersection was confirmed from the viewpoint of safety.
2) A traffic safety education at school and in home was realized.
3) Some ideas were propped to improve the safety condition at the target-intersection, as well as in the residence.
4) Some useful materials for road safety, such as the teaching material for children, the publicity activities for residents and so on based each activity of this study.
5) Better relationship between residents, children and members of PTA, administration of both city office and police was come out from this project.

Furthermore, we can propose that it should be necessary to introduce the public involved approach for road safety in the residential area, and choose more proper type approach according to the area characteristic.

However, in order to give the knowledge of appropriate approach, it should be essential to accumulate more case studies.


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## References


1) Hino.Y, Ueno.S, Mitani.T and Sawada: Case study on Experimental Approach for Road Safety, Proceedings of Infrastructure Planning, No23(2), pp767-770, 2000
2) Hino.Y, Kitama.H, Ueno.S and Nisizono.T: Effect of Phased Implementation in Experimental Approach for Road Safety, Papers on Traffic engineering, No. 21, pp. 109-112, 2001