

Country Name	Project on Improvement of Traffic Management Capacity in Lahore Central Area
Islamic Republic of Pakistan	

I. Project Outline

Background	Lahore, the provincial capital of Punjab, was the second largest city in Pakistan with a population of about 10 million. The city's rapid population growth coupled with extremely high motorization had resulted in chronic traffic congestion. To cope with this issue, JICA supported a project titled "The Project for Lahore Urban Transportation Master Plan Study in Pakistan (LUTMP)" (2010-2012), a long-term plan for the city's urban transportation up to 2030 and an action plan up to 2020 were developed. The LUTMP also proposed a comprehensive approach to urban transport measures along with the development of mass transit. The first Bus Rapid Transit line was developed with funding allocated by the Government of Pakistan, which contributed to decrease of traffic congestions along a major transport corridor. However, traffic congestions in Lahore Central Area were still increasing because there were no effective countermeasures for the different aspects of traffic management. (Figures at the time of ex-ante evaluation.)										
Objectives of the Project	<p>Through (i) developing capacity of Traffic Engineering & Transport Planning Agency (TEPA) and the related organizations for traffic management through training, (ii) enhancing institutional and personal capacity of TEPA for traffic management, (iii) summarizing the Pilot Project into "handbook" to be shared among TEPA and the related organizations as reference for other areas' improvement, and (iv) developing Traffic Management Improvement Plan in Lahore, the project aimed to enable TEPA to formulate and implement countermeasures for traffic management and to enhance knowledge of related organizations on traffic management in Lahore Central Area in Pakistan, thereby contributing to enabling traffic management to be planned and implemented in appropriate, reasonable and scientific manner.</p> <ol style="list-style-type: none"> Overall Goal: Traffic management in Lahore will be planned and implemented in an appropriate, reasonable and scientific manner. Project Purpose: TEPA will be able to formulate and implement countermeasures for traffic management. Knowledge of related organizations on traffic management will be enhanced. 										
Activities of the Project	<ol style="list-style-type: none"> Project site: Lahore Central Area. Main activities: (i) Development and implementation of training sessions for TEPA and organization of seminars for the related organizations¹; (ii) planning, implementation, and evaluation of the effectiveness of the Pilot Project for traffic management² and preparation, implementation, and monitoring of the institutional improvement plan of TEPA; (iii) development of the manual and the handbook for traffic management and organization of a seminar for the related organizations; and (iv) development of the Traffic Management Plan (TMP)³ including the Traffic Improvement Plan for Pedestrian and Traffic Demand Management Plan in Lahore Central Area. Inputs (to carry out above activities) <table border="0" style="width: 100%;"> <tr> <td style="width: 50%;">Japanese Side</td> <td style="width: 50%;">Pakistan Side</td> </tr> <tr> <td>1) Experts: 9 persons</td> <td>1) Staff allocated</td> </tr> <tr> <td>2) Equipment: Equipment for the Pilot Project</td> <td>2) Building and facilities: Project Office</td> </tr> <tr> <td>3) Local cost</td> <td>3) Local cost</td> </tr> </table> 			Japanese Side	Pakistan Side	1) Experts: 9 persons	1) Staff allocated	2) Equipment: Equipment for the Pilot Project	2) Building and facilities: Project Office	3) Local cost	3) Local cost
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Project Period	(ex-ante) December 2015-January 2018 (actual) January 2016-March 2019	Project Cost	(ex-ante) 274 million yen, (actual) 293 million yen								
Implementing Agency	Traffic Engineering & Transport Planning Agency (TEPA) under Lahore Development Authority (LDA)										
Cooperation Agency in Japan	METS Research & Planning, Inc., CTI Engineering International Co., LTD.										

II. Result of the Evaluation

<Constraints on Evaluation>

- Questionnaire survey to some of the related organizations was tried but could not be realized because no answers were received. Information was collected through interview to TEPA based on the questionnaire and field visits. Also, it was difficult to collect additional information to confirm the initial survey results sufficiently from TEPA due to their busyness.

<Special Perspectives Considered in the Ex-Post Evaluation>

- The Project Purpose Indicator 2 ("Traffic management is properly planned in a coordinative manner") was interpreted to be "Traffic management is properly planned in a coordinative manner with the related organizations whose knowledge on traffic management was

¹ The related organizations included Transport Planning Unit under Transport Department of Punjab State Government, Lahore Development Authority (LDA) (the upper agency of TEPA), Punjab Safe Cities Authority (PSCA), Metropolitan Cooperation Lahore (MCL) (the Lahore City Government), Lahore Parking Company (LePark), Lahore Transport Company (LTC), etc.

² The target of the Pilot Project was corridor management that included various traffic management measures for physical improvement such as installation of on-street parking space, sidewalks, crosswalk facilities (including push-button pelican signal), bus stop facilities, etc. and non-structured measures such as mobility management (MM) activities at 3 target schools along the Pilot Corridor. As the Pilot Corridor, Queens Road was selected among 6 corridors in the Pilot Project Area, which was surrounded by Mall Road, Lytton Road, Queens Road, and Fane Road.

³ The TMP consisted of 1- year plan (Action 1) mainly targeting the Pilot Corridor, 3-year plan (Action2) mainly targeting the Pilot Project Area, and a 5 year-plan (Action 3) targeting the Project Area (Lahore Central Area).

enhanced” because this indicator corresponded to the 2nd Project Purpose (“Knowledge of related organizations on traffic management will be enhanced”). Planning of traffic management mentioned in this indicator was interpreted to include planning of the Pilot Project and development of the TMP.

- The target year of the Overall Goal was set to be 2022 because the ex-post evaluation was planned 3 years after the project completion as per the Ex-ante Evaluation Sheet.
- The Overall Goal (“Traffic management in Lahore will be planned and implemented in an appropriate, reasonable and scientific manner”) was interpreted to target the sites of traffic management projects planned and implemented by using the technical documents prepared under the project, mainly the Pilot Project Area covered by the 1-year and 3-year plans of the TMP. In this connection, status of planning and implementation of traffic management projects, which utilized/were utilizing the technical documents, was checked as Supplementary Information.

1 Relevance/Coherence

[Relevance]
 <Consistency with the Development Policy of Pakistan at the Time of Ex-Ante Evaluation >
 The project was consistent with the development policy of Pakistan at the time of ex-ante evaluation. The Pakistan Vision 2025 (2014) set forth establishment of an efficient and integrated transportation system that will facilitate the development of a competitive economy.
 <Consistency with the Development Needs of Pakistan at the Time of Ex-Ante Evaluation >
 The project was consistent with the development needs of Pakistan for improvement of traffic management capacity in Lahore Central Area at the time of ex-ante evaluation as shown in the “Background”.
 <Appropriateness of Project Design/Approach>
 The project design/approach was appropriate. No problem attributed to the project design/approach was confirmed.
 < Evaluation Result>
 In light of the above, the relevance of the project is ③⁴.

[Coherence]
 <Consistency with Japan’s ODA Policy at the Time of Ex-Ante Evaluation>
 The project was consistent with the Japan’s ODA policy to Pakistan at the time of ex-post evaluation. The Country Assistance Policy for the Islamic Republic of Pakistan (2012) included “assistance for transportation infrastructure” under one of the three priority areas of “Improvement of economic infrastructure”.
 <Collaboration/Coordination with other JICA’s interventions>
 Any collaboration/coordination between the project and other JICA’s intervention was not clearly planned at the time of ex-ante evaluation.
 <Cooperation with other institutions/ Coordination with international framework>
 Any cooperation/coordination with other institutions was not clearly planned at the time of ex-ante evaluation.
 <Evaluation Result>
 In light of the above, the coherence of the project is ②.

[Evaluation Result of Relevance/Coherence]
 In the light above, the relevance/coherence of the project is ③.

2 Effectiveness/Impact

<Status of Achievement of the Project Purpose at the Time of Project Completion>
 At the time of project completion, the Project Purpose was mostly achieved as planned. Three technical documents (i.e., the Intersection Design Manual, the Pilot Project Handbook, and the TMP) were formulated as planned. For reference, they were distributed not only to TEPA but other traffic management related organizations to serve as a guide for project planning and implementation (Indicator 1). The Pilot Project and the TMP were properly planned in a collaborative manner with the related organizations whose knowledge on traffic management was enhanced through participation in (i) the Working Group established for the project, which formulated and implemented implementation plans of the project activities including the Pilot Project activities, discussed and agreed on the contents of the TMP, etc. and (ii) a series of knowledge-sharing seminars.
 <Continuation Status of Project Effects at the Time of Ex-Post Evaluation>
 By the time of ex-post evaluation, the project effects have been continued. The effects of the Pilot Project have been continued along the Pilot Corridor in the Pilot Project Area (see footnote 2) because the physical improvement has been maintained by the responsible organizations⁵ and awareness and mobility of the students improved by the mobility management (MM) activities (see footnote 2) has been sustained. All of the technical documents developed under the project have been continuously used by TEPA as a guide for planning and implementation of traffic management. According to TEPA, the technical documents are also being used by the related organizations such as MCL. The knowledge of the related organizations enhanced under the project has been maintained in general and traffic management has been planned properly in a coordinative manner because TEPA has not observed problems due to insufficient knowledge or collaboration of the related organizations in planning traffic management.
 <Status of Achievement of the Overall Goal at the Time of Ex-Post Evaluation>
 At the time of ex-post evaluation, the Overall Goal has been partially achieved based on (i) partial achievement of the Supplementary information and (ii) mostly achieved as planned of 2 indicators (partially promoted by a related organization’s traffic management project outside the TMP to which contribution of this project could not be confirmed due to lack of information).

⁴ ④:very high, ③:high, ②:moderately low, ①:low * To be the same afterwards.

⁵ Except for the push-button pelican signal managed by PSCA. Please see <Technical Aspects> of “Sustainability” for details.

As for the TMP, TEPA has developed the implementation plans for all the relevant actions of 1-year Action 1 and, 3-year Action 2 as planned. In addition, the implementation plan for one of the relevant actions of 5-year Action 3⁶ has been already developed. All of the developed plans have been approved by LDA but have not been implemented except for 3 out of 13 actions of Action 1⁷ due to suspension of almost all construction works and insufficient funds of the Punjab Government caused by COVID-19 pandemic and due to prioritization of implementation of 5 mega transportation projects⁸. by the Punjab Government, which has resulted in a shortage of the already limited funds of LDA. TEPA is expecting that the approved plans will be implemented in the next fiscal year (Pakistan Fiscal Year (PFY)⁹ 2023), but it is not certain because this will depend on the priority of the Punjab Government. As for Action 2, PSCA is also developing an implementation plan for the action under its purview. Although the TMP has not been implemented as planned, TEPA/LDA has used all the technical documents as reference documents in planning and/or implementing the above-stated 5 mega transportation projects in Lahore TEPA has also referred to all the technical documents in developing traffic management plans for 5 sites outside the Pilot Project Area, which were approved by LDA in PFY2020-2021 and are expected to be implement in the passage of time. In addition, referring to the manual and the handbook developed under the project, MCL has planned and implemented road maintenance in Lahore (Supplementary Information).



Source: Final Report

Although the TMP has not been implemented as planned, the traffic condition around the Pilot Project Area has been maintained according to TEPA. The promoting factors include continuation of the effects of the Pilot Project and completion of the 3 items of Action 1 of the TMP along the Pilot Corridor as mentioned above, installation of traffic signals and intersection initiated by PSCA all over Lahore including the Pilot Project Area (the use of the technical documents developed under the project in planning and implementation could not be confirmed), and ease of traffic congestion as a result of these. Outside the Pilot Project Area, the traffic condition has been maintained around the 2 completed sites of the above-mentioned mega projects because of the construction of mega transportation facilities and improvement of traffic congestion¹⁰ (Indicator 1). TEPA also mentioned that the satisfaction of road users has been improved in the Pilot Project Area as well as around the 2 sites of the completed mega projects outside the Pilot Project Area because the traffic congestion has been eased (Indicator 2). The statements of TEPA regarding the traffic condition and the satisfaction of road users were confirmed by field observation at different sites in the Pilot Project Area, including the Pilot Corridor, and interview of 5 road users (2 female users) at the Pilot Corridor. The quantitative data to verify their statements, however, was not available. It is noted the contribution of the project is confirmed along the Pilot Corridor, where the effects of the Pilot Project have continued and the TMP developed under the project has been partially implemented as well as around the 2 sites of the mega projects for which the technical documents of the project have been utilized. In the Pilot Project Area other than the Pilot Corridor, the PSCA's traffic management project (outside the TMP) has promoted the maintenance of traffic condition and the satisfaction of road users. It is not clear whether the project has contributed to this because, due to difficulty in collecting information on the related organizations (see <Constraints on Evaluation>), the use of the project results in the PSCA's project could not be confirmed.

<Other Impacts at the Time of Ex-Post Evaluation>

There is a synergetic effect with the LUTMP because the construction of the Orange Line Metro Train System stated in footnote 8 is one of its important components. There is also a positive impact on gender as a post graduate medical college for women is located on the Pilot Corridor and it has been convenient for female students to move around because traffic congestion has been eased and proper walkway for pedestrians has made available by the Pilot Project. Meanwhile, no negative impacts have been observed.

<Evaluation Result>

In light of the above, the effectiveness/impact of the project is ③.

Achievement of Project Purpose and Overall Goal

Aim	Indicators	Results	Source
(Project Purpose) TEPA will be able to formulate and implement countermeasures for traffic management.	Indicator 1: Technical documents for design and implementation are developed.	Status of the Achievement (Status of the Continuation): mostly achieved as planned (continued) (Project Completion) -Three technical documents (i.e., the Intersection Design Manual, the Pilot Project Handbook, and the TMP) were formulated, which were distributed to TEPA and the related organizations. (Ex-Post Evaluation) -All the technical documents developed under the project have been used by TEPA in planning traffic management. The technical documents have been also used by the related organizations.	Final Report Interview to TEPA based on the questionnaire
Knowledge of related organizations on	Indicator2: Traffic management is properly planned in a coordinative	Status of the Achievement (Status of the Continuation): mostly achieved as planned (continued) (Project Completion) -The Pilot Project and the TMP were properly planned in a collaborative manner with the related organizations whose knowledge on traffic management was enhanced through participation in	ditto

⁶ Improvement plan of Qartaba Chowk, the intersection with the most traffic volume in the Project Area according to the traffic survey conducted under the project.

⁷ Relocation of signboard for bus stop and installation of word marking "BUS STOP" as well as installation of information board at the pelican signal along the Pilot Corridor.

⁸ The projects on construction of Sheranwala Gate Flyover, Gulab Devi Underpass on Ferozpur Road, a flyover on Shahkam Chowk, 5 underpasses on Mall Road, and improvement of congestion at Barkat Market (Source: <https://www.zameen.com/blog/construction-mega-projects-lahore.html>)

⁹ PFY is from July to June.

¹⁰ In addition, as expected at the time of ex-ante evaluation, a synergetic effect with the construction project of the Orange Line Metro Train System implemented by the Punjab Government, has been confirmed. The Orange Line runs near the Pilot Project Area when it crosses the Project Area and it has an underground station on Mall Road, one of the 4 roads surrounding the Pilot Project Area. So, since its inauguration in October 2020, it has improved the traffic congestion in and outside the Pilot Project Area a lot.

traffic management will be enhanced.	manner.	(i) the WG established for the project, which formulated and implemented implementation plans of the project activities including the Pilot Project activities, discussed and agreed on the contents of the TMP, etc. and (ii) the knowledge-sharing seminars. (Ex-Post Evaluation) -The knowledge of the related organizations enhanced under the project has been maintained and traffic management has been planned properly in a coordinative manner because TEPA has not observed problems due to insufficient knowledge or collaboration of the related organizations in planning traffic management.	
(Overall Goal) Traffic management in Lahore will be planned and implemented in an appropriate, reasonable and scientific manner.	Indicator 1: Traffic condition in Lahore is maintained.	(Ex-Post Evaluation) mostly achieved as planned -According to TEPA, the traffic condition in the Pilot Project Area has been maintained. This has been promoted by continuation of the effects of the Pilot Project along the Pilot Corridor and the effects of improvement of traffic signals and junctions initiated by PSCA (the use of the technical documents developed under the project could not be confirmed). Outside the Pilot Project Area, the traffic condition has been improved around the 2 sites of the completed mega transportation projects for which the technical documents were referred to in planning and implementation. -The statement of TEPA was confirmed by field observation and interview of 5 road users, but quantitative data to verify the statement was not available.	Interview to TEPA based on the questionnaire, field observation and interview to 5 road users at the Pilot Corridor.
	Indicator 2: User's satisfaction is improved.	(Ex-Post Evaluation) mostly achieved as planned -According to TEPA, satisfaction of road users in the Pilot Project Area as well as around the 2 sites of the completed mega transportation projects outside the Pilot Project Area has been improved because the traffic condition has been maintained as explained above. -The statement of TEPA was confirmed by field observation and interview of 5 road users, but quantitative data to verify the statement was not available.	ditto

3 Efficiency

Both the project cost and the project period slightly exceeded the plan (the ratio against the plan: 107 % and 108 %, respectively. The project period slightly exceeded the plan because some of the activities were delayed due to the National Election of Pakistan and contractor's problems of the construction under the Pilot Project. (Because of combined factor, the project cost exceeded the plan). Outputs were produced as planned. In the light above, the efficiency of the project is ③.

4 Sustainability

<Policy Aspect>

The Pakistan Vision 2025 stated in "Relevance" is still effective at the time of ex-post evaluation.

<Institutional/Organizational Aspect>

At TEPA, the organizational structure to promote the countermeasures for the traffic management has been unchanged and functioning. The necessary number of staff (9 in total) has been allocated. It is noted that majority of the staff trained under the project was part-time staff during the project implementation, but all of them are now permanent staff. TEPA has been continuously planning traffic management in close coordination with other related organization such as MCL, Traffic Police, LePark, LTC and PSCA.

<Technical Aspect>

TEPA has sustained necessary skills and knowledge through retaining almost all the technical staff trained under the project and utilization of the acquired skills and knowledge in planning and implementing traffic management measures by referring to the technical documents developed under the project. As stated earlier, the handbook and manuals developed under the project have been utilized by some of the related organizations trained under the project as well. All the equipment installed at the Pilot Project site is maintained in good condition and utilized except for the push-button pelican signal managed by PSCA, which are not functioning due to failure. According to TEPA, the pelican signal has not been repaired because it is difficult for local people to follow them properly as they are not common in Pakistan¹¹.

<Financial Aspect>

TEPA, LTC, and LePark¹² have secured the necessary budget for maintenance of the equipment/facilities provided under the project respectively from LDA and the Punjab Government. TEPA, however, has not been able to secure the budget to implement the approved plans of the TMP due to shortage of budget of LDA caused by COVID-19 pandemic and implementation of the mega transportation projects prioritized by the Punjab Government as explained in "Effectiveness/Impact". TEPA stated that they would be able to secure the budget for the TMP in PFY2023 depending on the priority of the Punjab Government. Meanwhile, LDA has secured the budget to implement 5 mega transportation projects for which the technical documents developed under the project have been used as reference documents.

<Environmental and Social Aspect>

No issue on environmental and social aspect has been observed and it has not been necessary to take any countermeasures

<Evaluation Result>

In light of the above, slight problems have been observed in terms of the financial aspects of the implementing agency. Therefore, the sustainability of the project effects is ③.

5 Summary of the Evaluation

The project mostly achieved as planned the Project Purpose of (i) capacity building of TEPA to formulate and implement countermeasures for traffic management and (ii) enhancement of knowledge of the related organizations on traffic management and the effects of the project have continued. The project has partially achieved the Overall Goal of planning and implementation of traffic management in Lahore in an

¹¹ In fact, the push-button pelican signal was not used properly even during the Pilot Project due to lack of awareness on proper use as it is not common in the country. Campaigns for pedestrians and drivers about the use and benefit of the pelican signal were not conducted during the project implementation. They have not been conducted after completion of the project, either.

¹² It is noted that LePark is about to shut down by around the end of PFY2023 due to internal issue.

appropriate, reasonable and scientific manner mainly due to (i) delay of implementation of the TMP caused by the COVID-19 pandemic and prioritization of mega projects by the Punjab Government and (ii) lack of information to confirm the contribution of the project to some area where maintenance of traffic condition and improvement of users' satisfaction have been promoted by a related organization's traffic management project outside the TMP. No problems have been observed in terms of the policy, institutional/organizational, technical, and environmental and social aspects. Considering all of the above points, this project is evaluated to be highly satisfactory.

III. Non-score Items

Adaption and Contribution:

- Duties to be fulfilled by JICA were fulfilled, and JICA's supervisions/supports and communications/partnerships with the implementing agencies were appropriate.

Additionality and Creative Values:

- N/A.

IV. Recommendations & Lessons Learned

Recommendations for Implementing Agency:

- It is recommended that TEPA engage some other parking company in place of LePark by the end of PFY 2023 to sustain the on-street parking area introduced at the Pilot Corridor.
- It is recommended that TEPA repair the push-button pelican signals and spread the use of them among people.

Lessons Learned for JICA:

- JICA, Japanese Expert and implementing agency of the project should have considered if facility for traffic management to be introduced such as pelican signal is common enough in the country at planning stage of pilot project(s) during the project implementation
- JICA should have made sure that campaign for use and benefit of newly introduced facility such as pelican signal will be implemented repeatedly during the project implementation and after the project by the implementing agency so that users can know how to use and the benefit.



Signboard for bus stop relocated and word marking "BUS STOP" installed by TEPA according to Action 1 of the TMP



Information board (road sign for cross walk) at the pelican signal installed by TEPA according to Action 1 of the TMP