



Inclusive Mobility: Improving the Accessibility of Road Infrastructure through Public Participation

East Asia and Pacific Region Transport,

This note describes a number of innovations taken by some Chinese cities, in particular Jinzhou, Liaoning Province, to ensure that urban transport systems are more accessible for the mobility-challenged. Public participation by disabled residents in Liaoning Province in northeast China has increased awareness and consideration for special needs in the design and implementation of road infrastructure. Jinzhou has convened a series of meetings inviting public participation on the issue of improving traffic infrastructure for use by disabled people. With the introduction of some low or no-cost features, the principle of “people first” for urban transport has been put into practice.

People with mobility impairments in cities around the world have long struggled to have their special needs accommodated in the design of urban infrastructure. The quality of life for citizens is reduced when they cannot take full advantage of roads, sidewalks and other transport facilities. Recently, significant progress has been made in the developed world to consider the needs of those with full or partial disabilities such as blindness and paralysis by implementing a number of features including textured pavements, curb cuts, safety islands, countdown and audible crossing signals.

The World Bank has been working with various clients in China to identify ways to effectively introduce public participation in the infrastructure planning and implementation process. A structured consultation process can help with particular needs, especially those of pedestrians, bicyclists, and other vulnerable road users that require special attention to detail and coordination between multiple agencies such as designers, builders, operators, maintenance, and law enforcement officials. Since 2006, several cities in Liaoning have been conducting a series of consultations to involve the public in the design and implementation of a Bank-financed urban transport Project. The typical urban transport project in this province includes a comprehensive package of new road infrastructure, road rehabilitation and maintenance, traffic safety and management, public transport and institutional development.



Exhibit 1: Field test of new sidewalks by a blind resident in Panjin, China

In response to suggestions by Bank missions in Liaoning Province, the cities of Benxi, Panjin and Jinzhou took a series of highly innovative steps to include disabled residents in project

implementation. In all three cities, the local government organized seminars to increase the awareness of disabled residents of project activities, and invited members of the disabled community to test newly constructed road facilities and provide input on their accessibility and functionality (Exhibit 1).

In Jinzhou, in particular, a number of very useful comments arose from field tests and discussions. This resulted in actionable recommendations for current and future civil works. The Jinzhou Municipal Urban Transportation PMO and Jinzhou Municipal Federation of Disabled Persons (FDP) jointly convened a meeting in August 2007 (Exhibit 2). The purpose was to solicit opinions from disabled residents about the new and rehabilitated road facilities. Among the participants were leaders and 15 local representatives of FDP, including male and female, young and old, all with disabilities in the lower limbs or with their vision. The PMO also convened the directors from the responsible design and construction departments to present on the current plans for the project. In addition, reporters from three local newspapers attended the meeting.



Exhibit 2: Meetings held before and after field tests to receive input from the Federation of Disabled Persons in Jinzhou, China



Exhibit 3: A disabled resident of Jinzhou tests the pedestrian crossing of a new Bank-funded road

Following the meeting, all participants were led by the Jinzhou PMO on a tour of a completed road section. Several intersections, as well as sidewalk and crosswalk facilities, were inspected by local residents with vision impairments or with disabled lower limbs requiring the use of wheelchairs or crutches (Exhibit 3).

The PMO design and construction personnel carefully listened to comments during the field tests before returning for a follow-up meeting with the participants. FDP leaders and disabled participants expressed their appreciation in being consulted and offered a number of specific comments and suggestions. The PMO Director promised that the recommendations of the meeting would be carefully considered and implemented in future projects. Among the recommendations and agreed actions were:

- Curb cuts should be smooth and without the existing 2-cm raised edges, which can obstruct wheelchairs and trip up pedestrians. The project representatives agreed to level curbs to the road surface and remove the ridges from curbs in the ongoing projects.
- Safety islands provide an important refuge for all pedestrians crossing wide streets.

However, the raised edges of the curbs are an obstacle for wheelchairs and the islands are too narrow to accommodate wheelchairs. Project representatives agreed to remove the ridges from curb cuts and make the islands at least 1.5 meters wide where technically feasible. (Exhibit 4)

- The textured pavement lane embedded in sidewalks facilitates the use of canes and allows the visually impaired to use their tactile sense for orientation (Exhibit 5). However, at 50-cm wide the lane is too narrow and is sometimes blocked by vehicles, debris or obstacles which creates a hazardous and sometimes circuitous route. Project representatives agreed to consider widening the textured lane if the width of the sidewalk permits, to install different shaped tactile points to alert users of turns, and to make the path as direct and obstacle-free as possible.



Exhibit 4: A resident of Jinzhou inspects new safety islands and curbs in a wheel chair



Exhibit 5: A blind resident with a cane tests the textured pavement on a newly-constructed sidewalk of Jinzhou

- Textured pavement could be used on road crosswalks in addition to sidewalks. Project representatives agreed to consider the feasibility of this suggestion.
- Pedestrian signals should have audio features to alert the visually impaired of the signal phase and how much time remains for crossing. Again, project representatives agreed to consider this where feasible.
- Some damaged sidewalks and pavements are not repaired in a timely manner, and pose a hazard for pedestrians. Project representatives agreed to better coordinate and expedite repairs.

In September 2008, the Jinzhou Municipal Urban Transportation PMO and the Jinzhou Municipal Federation of Disabled Persons (FDP) jointly convened a second meeting. Among the participants were 5 disabled people from the FDP as well as 30 other local representatives. In addition, the Municipality Construction Commission, the Transportation Bureau, the Traffic Police, Bus Company, and design institute were also represented at this meeting (Exhibit 6).

The meeting reported on the implementing status of the action plan made in 2007. While many of these ideas have already been carried out the Vice-Director gave detailed explanations of some

problems that have not yet been solved. Following this, representatives of the disabled communities expressed their views on the improvements made to the infrastructure.

The recommendations and agreed actions from the initial meeting of August 2007 were reaffirmed. In particular, Project representatives agreed to consider widening the textured lane to 60 cm if the width of the sidewalk permits. Also, it was reiterated that timely maintenance is of crucial importance and Project representatives agreed to better coordinate and expedite repairs. Jinzhou Municipality Maintenance and Management Department is responsible for the maintenance of obstacle-free facilities. It was agreed that they should repair the broken facilities as soon as possible.



Exhibit 6: The second Public Participation Meeting held in Jinzhou, China

In addition, the meeting collected public opinion about textured pavement, ramp conditions, municipal facilities and bus routes constructed between 2006 and 2008. The representatives discussed the road quality, public transport facilities, the construction of safety islands and vehicle noise etc. They proposed some ideas about safety island signage, the frequency of buses and the use of pedestrian lanes (Exhibit 7). The recommendations and agreed actions are as follows:

TABLE 1: The recommendation and agreed action (2008)

No.	Recommendation put forward by disability	PMO action plan
1	Some buses do not provide a warning when they have stopped in the station. This situation is inconvenient and potentially hazardous for disabled, especially blind, commuters.	The buses must provide adequate warning when they are stopping in the station to permit safe and efficient boarding and alighting. The Bus Company must take effective measures to improve the quality of service.
2	Many private cars park in the pedestrian lane, and occupy the textured pavement.	Traffic police must enforce the supervision and management of illegal parking.
3	The information on the signs at major stops is not sufficient. In some cases signage is non-existent.	Traffic police should install adequate warning and information signs at all major bus stops immediately, especially at schools.
4	The west gate of Bohai University is not adequately served by buses.	The Bus Company should arrange bus frequency and a reasonable schedule according to passenger demand.
5	At night the noise of slowing buses is too loud.	Reduce noise from vehicles, especially at night. Improve the quality of the braking system.
6	The quality of textured pavement brick is not adequate.	Improve the quality of the textured pavement brick to increase the degree to which it can be detected by the visually impaired.

For some time the World Bank has been working together with various clients in China to identify ways to effectively introduce public participation in the infrastructure planning and implementation process.

The participation of disabled residents in testing and improving road facilities has become an important tool for project officials and city leaders. Project officials in Benxi, Panjin and Jinzhou have affirmed the value of the accessibility tests and discussions because they have helped ensure that the project delivers the maximum benefit to the most people. What was once disregarded or considered non-essential in urban transport infrastructure investments is now an integral part of Bank-financed projects in China. By



Exhibit 7: Disabled persons attended the meeting and put forward suggestions

being more aware of special needs and introducing some low or no-cost investments, the Chinese principle of “people first” for urban transport has been put into practice in Liaoning Province.

This second meeting of September 2008 is noteworthy as it took place *after* the World Bank involvement in the project had officially ended. As such it demonstrates the initiative and progress of the disabled community as well as the responsiveness of government entities.

It is hoped that the successful dialogue conducted in Jinzhou can be achieved elsewhere and not only in road infrastructure but also in other projects.