



Udaipur – An **Urban95** City

## Traffic-Calming Measures at Vidhya Bhawan Pre-Primary School Entrance



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Implementation of traffic-calming measures at the Vidhya Bhavan School entrance that opens to a busy road, to provide a safe pedestrian-crossing area to pre-primary school kids and their care-givers.

**Project** –Urban95 Program, Udaipur

**City Partner** –Udaipur Municipal Corporation (UMC)

**Funder cum Supporting Partner** –Bernard Van Leer Foundation (BvLF).

**Technical Partner** – ICLEI- South Asia

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## 1. Urban95 in Udaipur

Udaipur city associated with the Urban95 Program of the Bernard Van Leer Foundation (BvLF) to become an Infant, Toddler and Caregiver (ITC) friendly city. Udaipur Municipal Corporation (UMC) joined the global Urban95 program in early 2019, becoming the third Indian city to do so. ICLEI – Local Governments for Sustainability, South Asia is providing technical support to the on-ground implementation of this program.

Under the program, a series of tactical and pilot interventions have been planned in identified pilot demonstration wards to apply ideas on the ground in Udaipur to generate interest and showcase impact to the people.

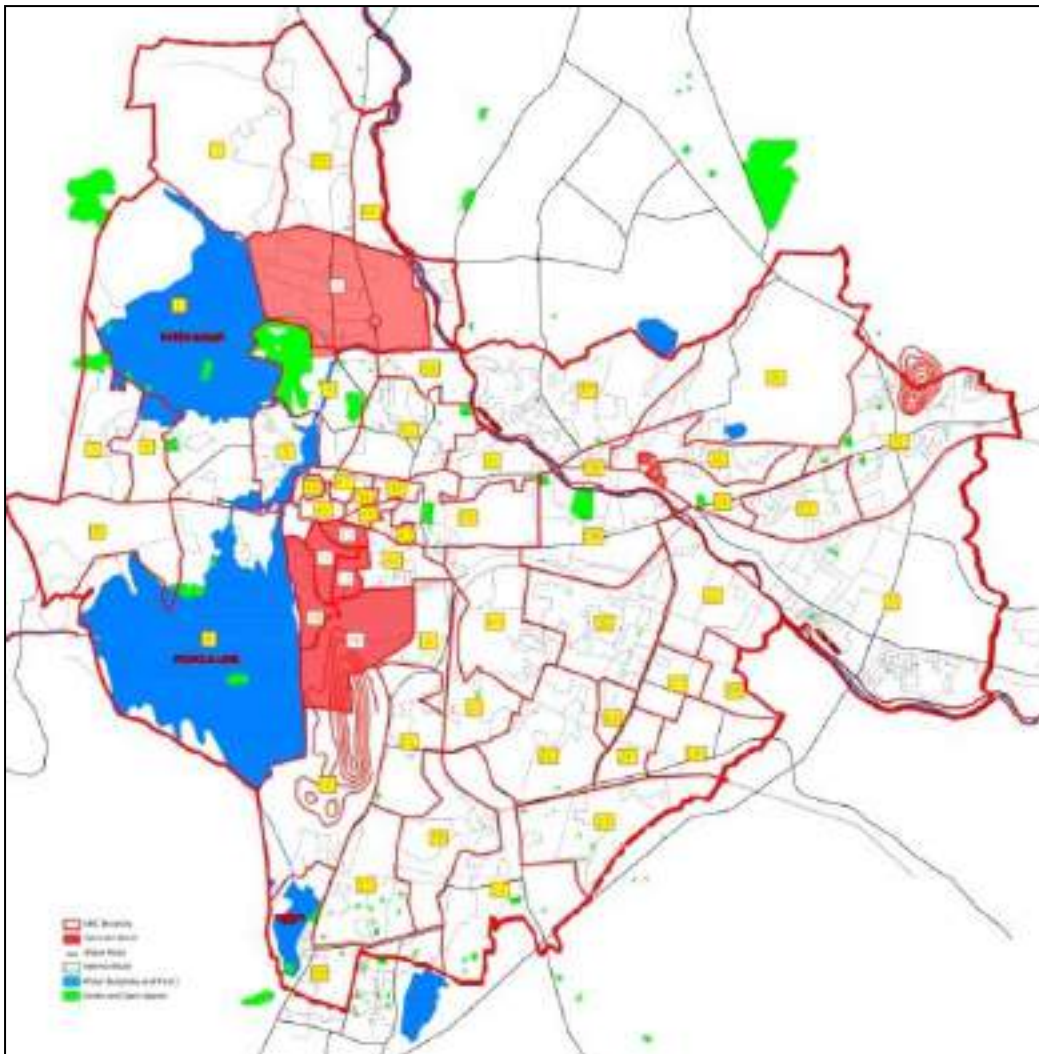
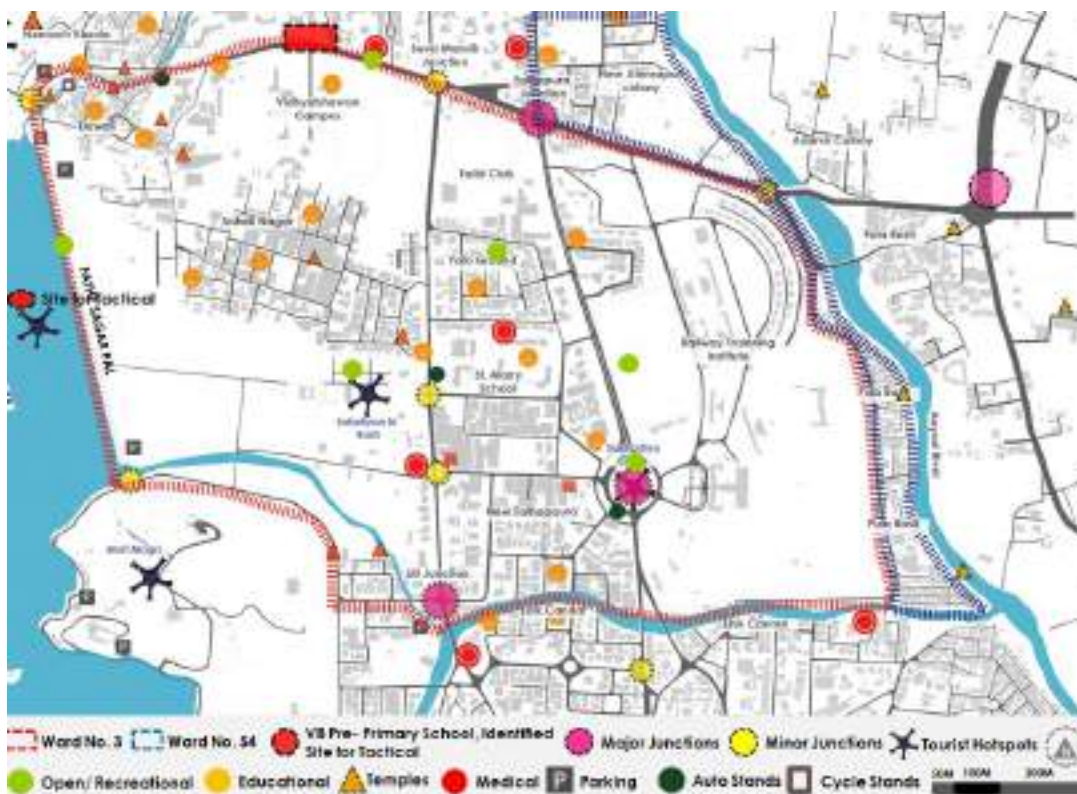


Figure 1: Municipal Boundary and Pilot Demonstration Wards, Udaipur



### 1.1. 'Traffic-Calming Measures' as Tactical Intervention

Vidhya Bhawan Road (VBR) in Udaipur is one of the major roads that connects Fatehpura Circle and Dewali Circle with Vidhya Bhawan Educational Society (VBES). The institution includes pre-primary, primary and secondary schools, a polytechnic college and a teacher-training institute, along with a playground, auditorium, hostel and mess block, among others. It opens directly onto the main road and is surrounded by residential colonies. Many infants, toddlers and their caregivers (ITC) use this road daily.



**Figure 2: Identified Site for Tactical Intervention and Activity Mapping, Ward No. 3**

Vidhya Bhawan Road also connects other neighbourhood schools (pre- primary and primary) and a few tourist landmarks, making it a major road that sees heavy traffic, including vehicles transporting families with young kids, especially during the school opening and closing times.

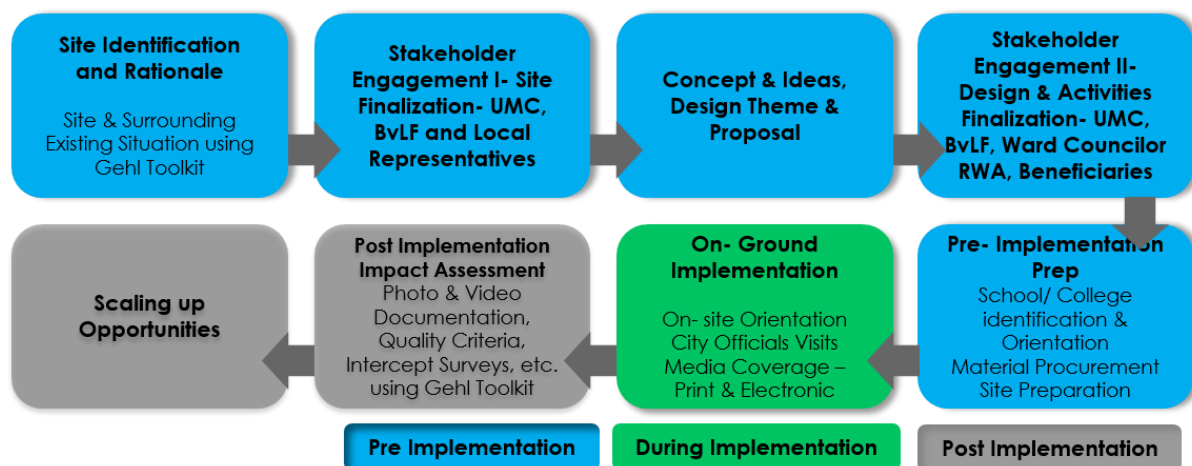
However, there is an absence of effective traffic-calming measures such as tabletop crossings or speed barriers, road markings and signages on the road. The fast-moving traffic is dangerous not only for young children and their caregivers, but for all pedestrians (including the elderly) and slow-moving vehicles such as cycles.

This location was therefore identified as having high ITC footfall, and it was decided to introduce innovative traffic-calming measures, involving:

- low- cost, high impact implementable solutions, with high visibility, replicability and scalability
- slowing down of the traffic on the wide, undivided carriageway, along which several educational institutions are located;
- introduction of traffic-calming schemes that are colorful and interactive, have visually compelling streetscape, and allow young children and their caregivers to get involved;

## 1.2. Approach & Methodology

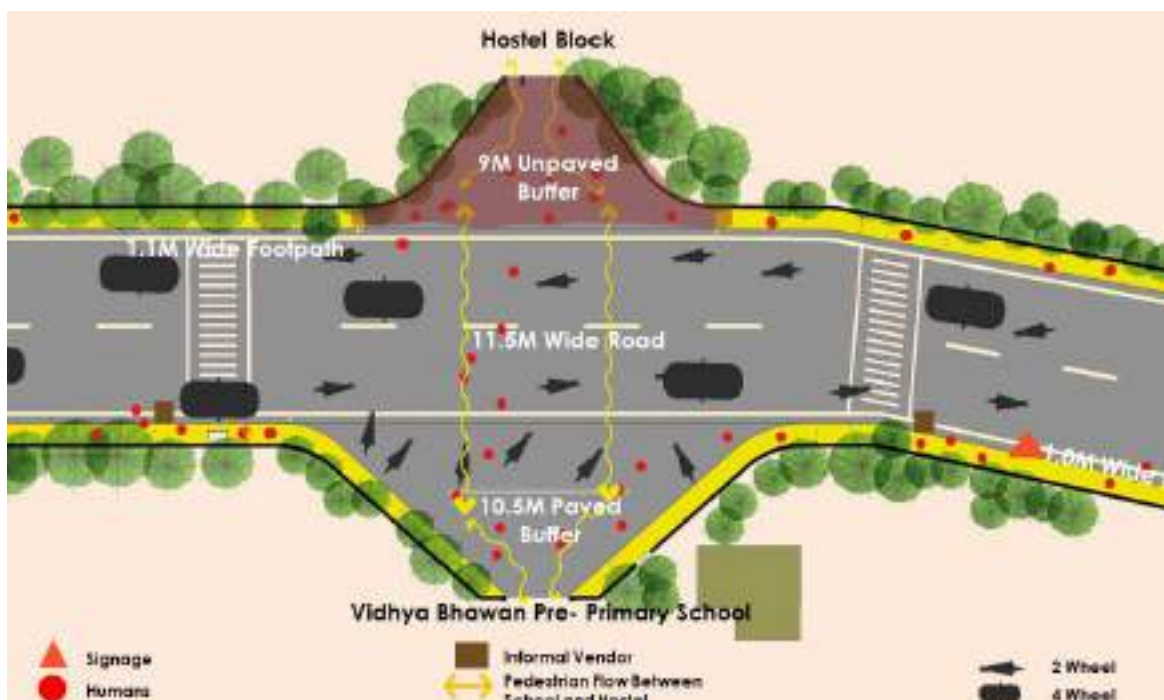
The following methodology was adopted for implementing the tactical on the ground:



**Figure 3: Methodology Adopted for On-ground Implementation of Tactical Intervention**

## 2. Vidhya Bhawan Pre-Primary School Entrance as the Site

The 1.2-km long undivided and two-way Vidhya Bhawan Road (VBR) has a right of way (RoW) that is ~7.5m to ~16m wide. The one-metre footpaths on either side of the road are narrow and broken at places, and have obstructions in the form of trees, lamp posts and signage poles, among others. The footpath also has a decorative mild steel railing along most of the stretch, but it is broken at a few places.



**Figure 4: Entrance of Vidhya Bhawan Pre-Primary School, Identified Site for Tactical Intervention**

The entrance to Vidhya Bhawan pre- primary school, catering to 130 children, opens directly onto the VBR. But there is a 10m-wide buffer zone between the school gate and the road, which serves as a waiting area for the children and their parents. It is a sort of a safety net between the fast-moving traffic and the children. The buffer zone was also being used by rickshaws and parents waiting in vehicles to pick up their children. The footpath leading to the school is less than one-metre wide and has obstructions in the form of lamp posts and trees, and is broken at a few places, and hence being seldom used by pedestrians.

As this is a school zone, the road has a zebra crossing, but it is located away from the school gate and people were not using it. Instead, the pedestrian desire line is just outside the school gate. Moreover, one of the zebra crossings ends next to a large

transformer on the footpath, making it unsafe for all pedestrians. A cautionary 'school ahead' sign, located 50m from the school entrance, is hidden by tree branches.

It was observed that the pedestrian crossing in its current form and shape was unsafe (for children and other vulnerable pedestrians) and more interventions were required to slow down the traffic.



**Figure 5: The entrance to Vidhya Bhawan Pre- Primary School, before the tactical intervention was implemented**



## 2.1. Mapping the Existing Situation

The identified site was mapped and studied to gauge its status on ITCN indicators and userbase, using quality criteria, intercept survey, and stakeholder & user interviews to map user needs and aspirations.

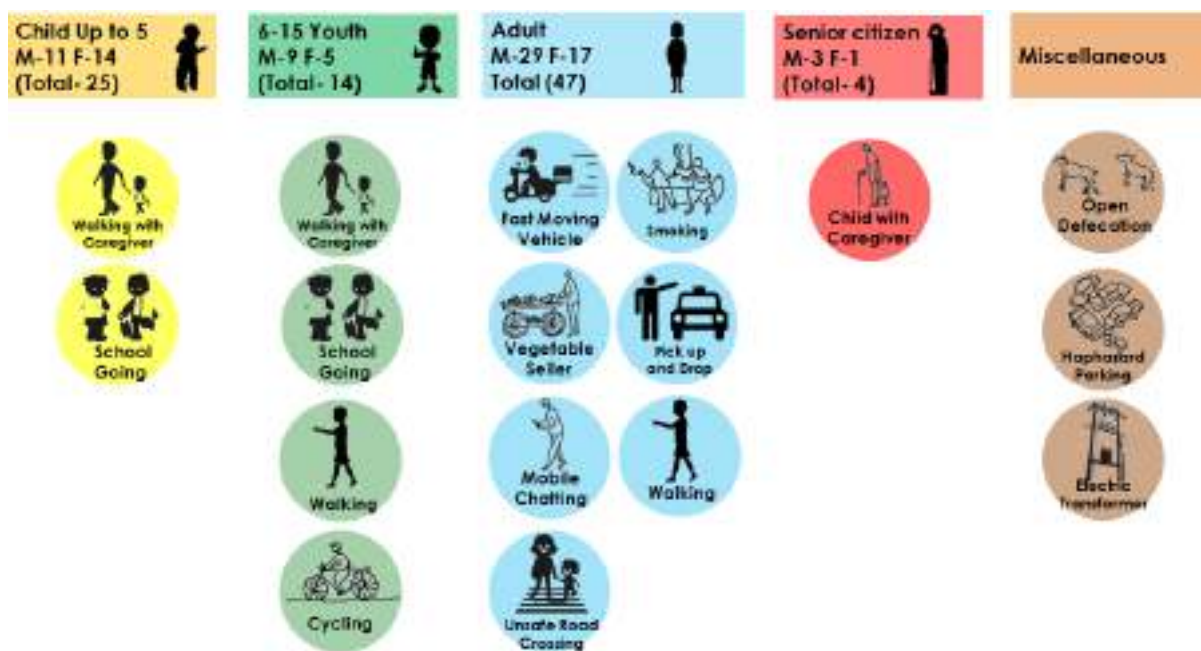


Figure 6 Activity Mapping at Vidhya Bhawan Pre- Primary School Entrance

Table 1: Available and Missing ITCN Indicators

Available ITCN Indicators	Missing ITCN Indicators
Street Lights	Signage indicating priority zone for schools
Shaded footpaths	Seating and resting spaces for caregivers
Boundary along the footpaths provides safety to pedestrians	Narrow and obstructed footpaths; not stroller or pram-friendly
	Surface finish of the boundary along footpath is not child-friendly
	Zebra crossing is located close to electric transformer
	Colors, art or banners, which could be visually appealing to children
	Gradients for ramps and footpaths

### 3. Design Proposal for 'Traffic-Calming Measures'

Based on the surveys and interactions, a draft proposal was developed for implementing simple measures at the school entrance. The measures aimed to slow down traffic for the safety of young children, their caregivers and other vulnerable pedestrians by creating color-coordinated and visually compelling spaces.



**Figure 7 Proposed Traffic-Calming Measures for Vidhya Bhawan Road**

A mix of technical and interactive solutions were proposed, using the carriageway and the buffer space on either side. Road markings were to be used to slow down traffic in this zone.

The proposed design involved a series of holistic technical and interactive measures spread over a 35m-wide area: a new zebra crossing close to the pedestrian desire lines; a 'Keep Clear Box' in the middle of the crossing to reduce traffic speed to not more than 15 kmph; 'Zig Zag Lines' on either side of the road, 75m from the school gate, which would visually reduce the road's width to 7.5m and also break the line of sight on the wider road. The zig zag lines would also visually extend the kerb line, creating an extra safety net for road users. It was the first time that zig-zag lines and the Keep Clear Boxes were being introduced in the state of Rajasthan.

All the above measures were proposed to be painted in thermoplastic paints, which are generally used for road markings and are permanent in nature.

Large colorful hands imprints were to be painted in the space between the old and the new zebra crossings to signal oncoming vehicles to stop, further forcing motorists to slow down. Colorful 'circles' of different sizes were proposed to be painted in the buffer zones, to engage the waiting kids and also to prevent vehicles from being parked there. It was also proposed to paint the boundary wall to make them interesting and engaging for the kids and their caregivers, breaking the monotony of a dull and boring streetscape.

All these measures were meant to showcase how such spaces could have a positive impact on the overall growth, health and wellbeing of young children. The emulsion paints proposed to be used are temporary in nature and fade away naturally.

### 3.1. Stakeholder Engagement- Design Concept and Site Finalization and Site Preparation & Cleaning

The proposed design concept was shared and discussed with the project partners and hosts for their approval and support for the on- ground implementation. It was also presented to the concerned Ward Councilor, school management and the parents of school children for their approval and support.

The discussions were complemented with on-site visits by UMC officials to understand the plan of the activities and also to decide the repair and maintenance needed at the site.



**Figure 8: Meetings, Discussion with Concerned Stakeholders and Site Preparation**

## 4. On-Ground Implementation

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The tactical intervention at 'Vidhya Bhawan Pre-Primary School Entrance' was implemented on the 16th and 17th of October 2019.

To create a sense of ownership and belonging among the local people, students from a nearby college were asked to be part of the implementation. These students showed enormous enthusiasm during the event. They were provided with refreshments and lunch and were presented appreciation certificates signed by the Mayor and Commissioner, UMC.

Various UMC officials visited the site to observe and appreciate the effort. Representatives from the Traffic Police also visited the site and said that such measures were the need of the hour, and would go a long way in introducing road safety measures at little expense. As the intervention was implemented during the Road Safety Week (RSW), they even linked the objectives of this intervention (reducing traffic speed and safety of kids and pedestrians) with the overall objectives of RSW.

Many passers-by stopped to watch the implementation activities and appreciated the idea, and suggested that the city roads needed more safety measures like these.





**Figure 9: Officials from UMC & Traffic Police attend the implementation of the tactical intervention**

After the interventions were completed, the area was opened to the public on the 18th of October 2019. Following that, the UMC started receiving requests and applications from other schools for implementation of similar measures in front of their entrances.



**Figure 10: Meeting with SP, Udaipur, to discuss the intervention and to replicate it in other parts of the city**

Superintendent of Police (SP), Udaipur, called the technical team for a meeting to understand the project and showed interest in replicating it at other suitable locations in the city. He also requested the team to help identify potential locations. The tactical implementation was also promoted via their social media (Twitter, Facebook etc.). An on-site notice board was erected by the traffic police, providing information about the use and the relevance of the intervention.





Figure 11: Tactical Intervention Implemented at Vidhya Bhawan Pre- Primary School Entrance



#### 4.1.1. Media Coverage

The intervention has been widely covered in the print and electronic media.

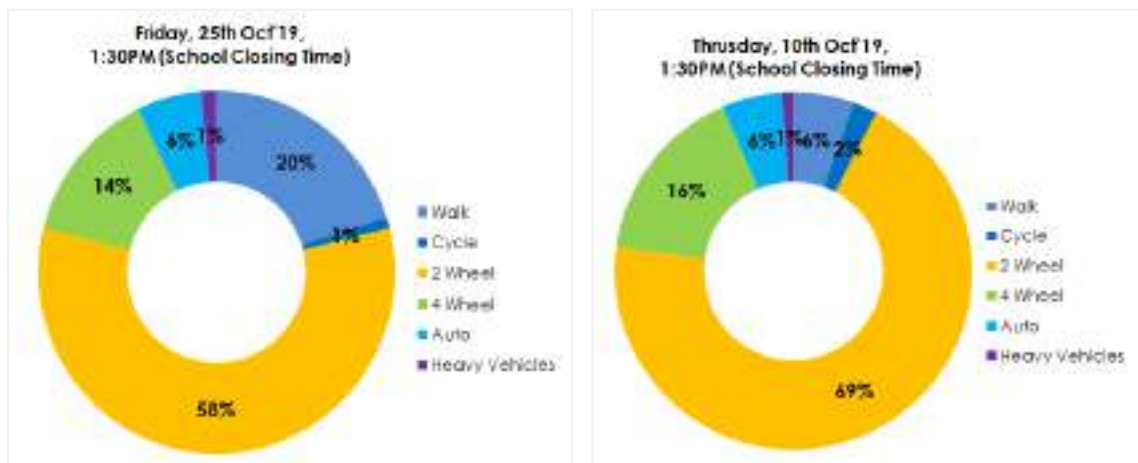


Figure 12: Print Media Coverage of the intervention



## 5. Post-Implementation Impact Assessment

The impact of this intervention has been documented based on comparative sample user counts, photo documentation and surveys on a regular weekend, in relation to post-festival weekend days.



**Figure 13: Traffic & NMT Count Traversing through the Area- Before and After the Implementation**

The collected evidence shows reduction in traffic speed and increase in footfall of the primary target audience, i.e. young kids and their caregivers, within this zone.

A comparative activity mapping also shows an increase in the number of activities the users are engaged in.

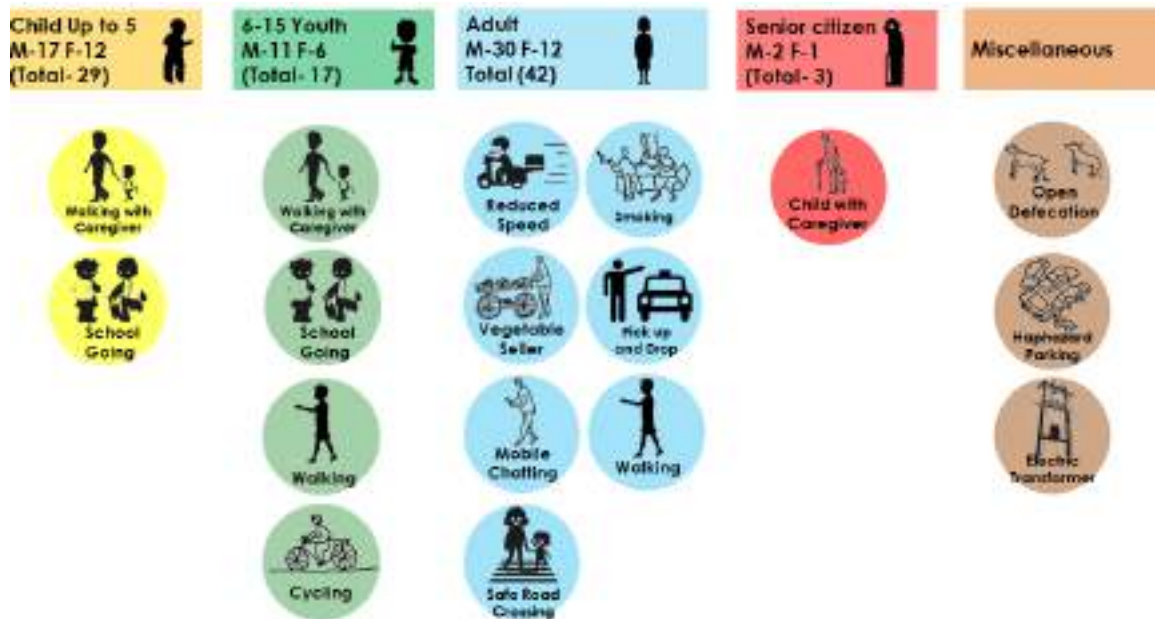


Figure 14: Activity Mapping at Vidhya Bhawan Pre- Primary School Entrance

Several rounds of interviews of parents, the school management and city officials were also conducted during and after the implementation, for their views on an increased sense of safety and interactive spaces for young kids.

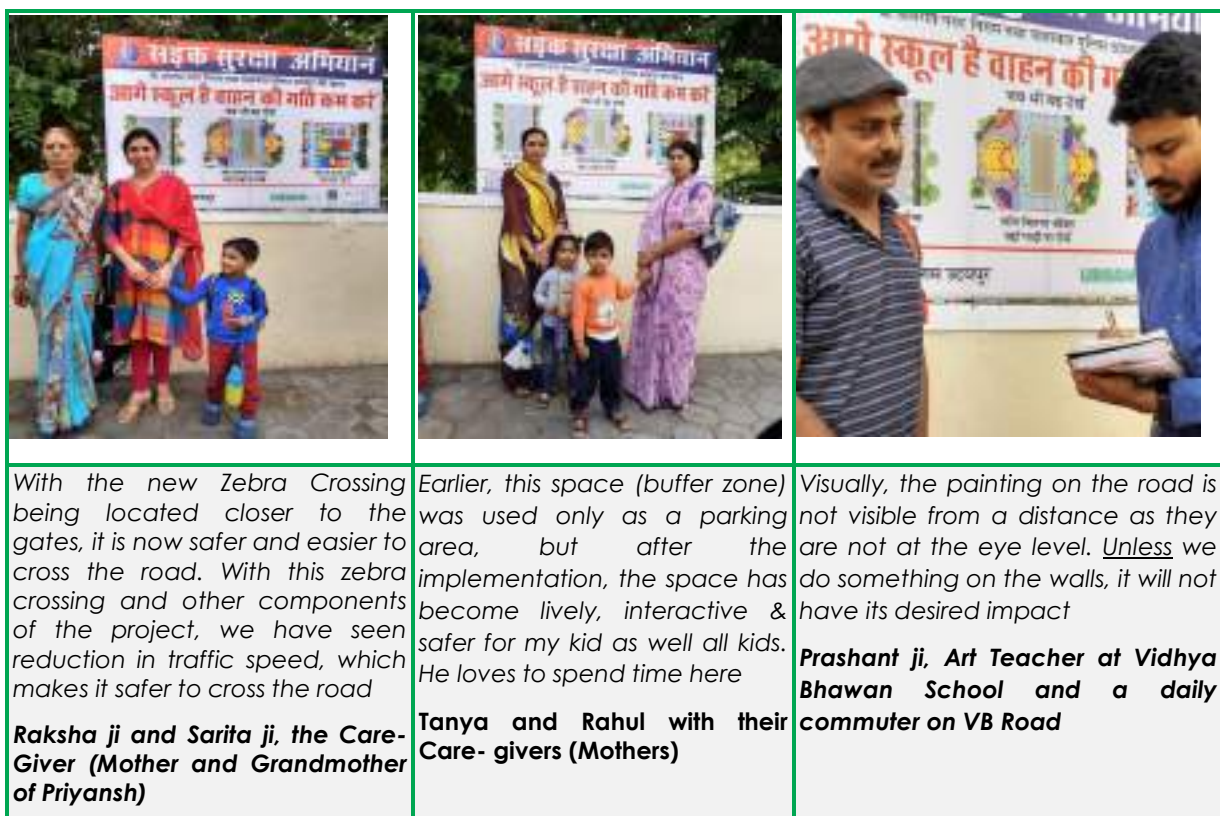


Figure 15: Stakeholders and User Interviews

## 6. Takeaways

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The key takeaway from the implementation of the tactical intervention at Vidhya Bhawan Pre- Primary School Entrance is that traffic management can be achieved with low- cost and easy-to-implement solutions, accompanied by the right ideas and thoughtful planning. The desired results are achievable without a huge capital investment.

Additionally, solutions like this are possible only with the able support and willingness of the city authorities, along with community involvement and participation. This is evident from the results achieved at this crossing, which helped to solve not just the traffic speed issue, but also demonstrated that children could be engaged with visually compelling streetscape. These measures had never been attempted before in Udaipur.

## Annexure I - Urban95 Quality Criteria

**Table 2: Urban 95 Quality Criteria, Vidhya Bhawan Pre- Primary School Entrance (Observations and User Interviews)**

S/n		Indicator	Before	After
1	Protection	Protection against traffic movement and accidents	Not safe for kids and caregivers to walk to school and to cross the road; it was unsafe for other vulnerable groups also (elderly people and slow walkers)  Haphazard parking outside school gate.	Successfully managed to reduce traffic speed with design elements and awareness banners.  Use of new pedestrian crossing for safer crossing of road  Organised parking in buffer zone after the intervention and orientation
2	Basic Needs	Feeling of comfort	Shaded footpath because of trees	The trees continue to provide shade
3	Comfort	Opportunities to walk and cycle	Unsafe for kids to walk or cycle on the road because of fast-moving traffic	Safer for pedestrians and cyclists after kerb extension, which gives them an extra sense of safety
		Visually appealing sights	Nil	Bright and colourful buffer zone outside the school gate
4	Social Interaction	Opportunities to talk & listen	High levels of traffic noise	It continues to be noisy
5	Connectivity	Opportunities to access the road	Accessible by all of modes of transportation	It continues to be accessible



## Annexure II - Intercept Survey

Table 3 Intercept Survey, Nayion ki Talai Chowk (Observations and User Interviews)

S/n	Category	Before	After
1	Safety	Not safe for kids and their caregivers because of fast-moving traffic	Reduced vehicular speed due to a series of measures, increasing a sense of safety
2	Spending Time	The buffer zone was used as parking and waiting area	With transformation of the buffer zone into an interactive and engaging area, kids can be seen playing with parents around. They show no urgency to leave this space
3	Mode of Transportation	Mostly two-wheelers and four-wheelers and rickshaws were used	Now, many parents are seen walking to school with their kids
4	Safe, comfortable place where a child can play	School premises have open space, lush green trees, slides and swings, but the buffer zone outside was grossly underutilized. It has the potential to become a better, interactive space for children	With implementation of tactical intervention, the buffer zone is being used as a play area
5	Ease of movement	Unsafe for pedestrians	With a series of measures in place, the area is safer for pedestrians
6	Comfortable for caregivers	The buffer zone was unsafe and uncomfortable for kids and caregivers, in the absence of any segregation between the carriageway and the buffer zone	Clear demarcation of the buffer zone and visual segregation have made the space very safe and comfortable for its users

## Annexure III - Photo



## Documentation Before and After



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