

A T R A N S

Road Safety Education on Potential of Safe Routes to School Program in Thailand

Interim presentation
24 September 2021



RESEARCH PROJECT FOR FISCAL YEAR OF 2021-2022

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Outline

0. Barriers and Progress

1. Statistics on accidents involving children on their way to school in Thailand

2. Backgrounds and Objectives

3. Methods

4. Materials for the focus group

5. Case studies and target groups

6. Preliminary survey results

**New
contents**

**Other sections are the
same as the proposal**



0. BARRIERS AND PROGRESS

Barriers

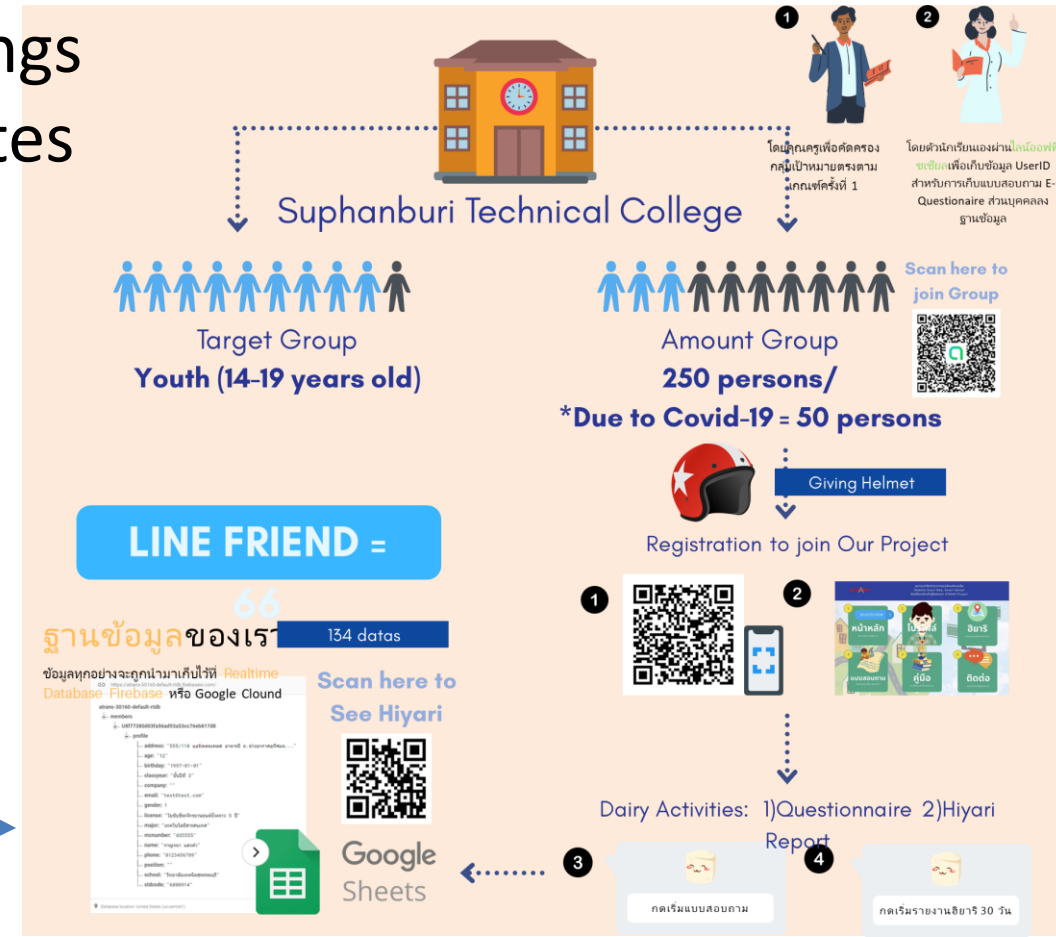
- Critical COVID-19 pandemic in Thailand starting April 2021
- The Thai government limits travelling and group meeting
- Students studying online until now
- This project cannot do any activities with students and communities, and cannot survey travel behaviours to schools

Progress

According to the barriers, this project has been:

- Preparing methods for evaluating existing routes to schools
- Preparing guidelines for focus group meetings for training stakeholders to design safe routes to school program by themselves
- Preparing for surveying attitudes and travel behaviours to schools
- Pre-Hiyari online survey by students at Suphanburi Technical College

Using a new Hiyari online app





1. STATISTICS ON ACCIDENTS INVOLVING STUDENTS ON THEIR WAY TO SCHOOL IN THAILAND

Year	No. of sample	No. of accidents	No. of injury	No. of disability	No. of fatality	Rate of fatality (per 100,000)
2020	261,673	52	51	1	1	0.38
2019	270,752	245	259	-	5	1.85
2018	310,144	185	267	1	5	1.61
2017	307,604	155	248	-	8	2.6
2016	501,287	517	877	1	15	2.99
2015	451,659	234	407	2	11	2.44
2014	419,336	39	194	-	8	1.91
2013	315,395	27	75	1	2	0.63

2019

Travel Modes to Schools

Travel Modes		
Riding/Driving	22,849	25%
With parents	25,867	29%
School bus	25,436	28%
Public transport	9,580	11%
Walking	3,625	4%
Total	89,793	



Riding/Driving modes		
Bike	2,552	12%
Motorcycle	18,134	85%
Car	255	1%
Pickup	285	1%
Others	37	0%
Total	21,263	

Aim

- to design, organise, monitor and assess safe routes to school programs in Thailand
- to educate stakeholders (teachers, students, parents and communities) to evaluate and design Safe Routes to School Program by themselves



3. METHODS

Safe routes to school program



Designing and organising

- **Engagement** with all related stakeholders
- **Enforcement** strategies
- **Engineering** strategies
- **Education** activities
- **Encouragement** activities

Monitoring and Assessment

- Monitoring how many students walk or bike to school **before** a kick off event taking place and how many students having intention to walk or bike **after** the events
- Assessing changes of attitudes and intentions of all stakeholders to walking and cycling to school
- Identifying internal and external barriers of the program

Project's Tasks

1. Focus group meeting with stakeholders
2. Surveying attitudes and travel behaviours to schools
3. Auditing routes to schools by students
4. Selecting and Designing Safe Routes to School program (Engineering, Enforcement and Education) by stakeholders (Focus group)
5. Monitoring and Assessing the results (attitude and travel behaviour survey)

- Safety education for students and communities
- Engagement with parents and other adults in communities

- Identifying traffic and security problems
- Identifying the real needs and demands for children to go to schools by themselves

Task 1: Focus group meeting with stakeholders

- Training on road safety
- Training on using ATRANS Safety Map application **(Hiyari online app)**
- Identifying challenges in local areas (e.g. fast-moving traffic, poor visibility, lack of infrastructure, pollution, security, ...)
- Designing forms for auditing routes to schools (walking, cycling and MC)
- Setting criteria for selecting safe routes to school
- Identifying a **safe, accessible and direct** route for a student's journey to school
- Designing safe routes to school program

Task 2: Surveying attitudes and travel behaviours to schools (before and after)

For gathering data:

- Attitudes and perceptions on general traffic and security problems
- Attitudes and perceptions on existing routes to schools (Safety, Directness, Comfort, Coherence, Attractiveness, Adaptability)
- Existing travel to school behaviours (including route to school, travel time and cost, travel mode, alternative travel mode)
- Need and demand of students and parents on safe routes to school program



4. MATERIALS FOR THE FOCUS GROUP

Design and Evaluation Guidelines

- [Evaluation of Walking Environment around Urban Railway Stations in Bangkok and Consideration of Improvement Plan](#). Ozawa, H., Fukuda, A., Malaitham, S., Vichiensan, V., Luatthep, P. and Numa, H., Asian Transport Studies, 2020.
- [Safe Routes to School Online Guide](#) - developed by the Pedestrian and Bicycle Information Center (PBIC) and support from the National Highway Traffic Safety Administration (NHTSA), Federal Highway Administration (FHWA), Centers for Disease Control and Prevention (CDC) and Institute of Transportation Engineers (ITE)
- [The International Road Assessment Programme \(iRAP\)](#) for Pedestrians, Bicyclists and Motorcyclists
- [Pedestrian Comfort Guidance for London](#): Guidance Document, Transport for London, 2010
- [London Cycling Design Standards](#), Transport for London, 2014
- [Designing streets for kids](#), National Association of City Transportation Officials, www.nacto.org

Supporting data

NO.	Attribute
1	Vehicle flow (AADT) / Intersection
2	Motorcycle percentage
3	Pedestrian peak hour flow across the road
4	Pedestrian peak hour flow along the road driver-side
5	Pedestrian peak hour flow along the road passenger-side
6	Bicycle peak hour flow
7	Speed - 85th percentile

Evaluation items (based on iRAP) – for Pedestrians

Along

1. Sidewalk
2. Curvature
3. Quality of curve
4. Sight distance
5. Lane width
6. Delineation
7. Grade
8. Road condition
9. Speed management / traffic calming
10. Vehicle parking
11. Shoulder rumble strips
12. Street lighting
13. Skid resistance / grip

Crossing

1. Number of lanes
2. Median type
3. Pedestrian crossing quality
4. Intersection type
5. Intersection quality
6. Pedestrian fencing
7. Skid resistance / grip
8. Sight distance
9. Speed management / traffic calming
10. Vehicle parking
11. Street lighting
12. Pedestrian crossing - inspected road

Evaluation items (based on iRAP) – for Bicyclists

Along	Roadside severity	Intersection
<ul style="list-style-type: none">1. Bicycle facility2. Lane width3. Curvature4. Quality of curve5. Delineation6. Shoulder rumble strips7. Road condition8. Grade9. Skid resistance / grip10. Sight distance11. Street lighting12. Vehicle parking13. Speed management / traffic calming	<ul style="list-style-type: none">1. Roadside severity - object2. Roadside severity - distance3. Roadside severity - passenger side distance4. Roadside severity - passenger side object	<ul style="list-style-type: none">1. Intersection type2. Intersection quality3. Grade4. Street lighting5. Skid resistance / grip6. Sight distance7. Intersection channelization8. Speed management / traffic calming9. Bicycle facility10. Pedestrian crossing - inspected road

Evaluation items (based on iRAP) – for Motorcyclists

Road attribute	Roadside severity	Intersection	Property access
1. Lane width	1. Roadside severity - object	1. Intersection type	1. Property access points
2. Curvature	2. Roadside severity - distance	2. Intersection quality	2. Service road
3. Quality of curve	3. Paved shoulder -width	3. Grade	
4. Delineation		4. Street lighting	
5. Shoulder rumble strips		5. Skid resistance / grip	
6. Road condition		6. Sight distance	
7. Grade		7. Intersection channelization	
8. Skid resistance / grip		8. Speed management / traffic calming	
9. Median type			

Pedestrian Comfort Level Assessment

- **Assess Footway Comfort:** data on the footway width, and the location and type of street furniture is required
- **Assess Crossing Comfort:** to understand whether the infrastructure for crossing the road is comfortable for users

(Pedestrian Comfort Guidance for London: Guidance Document, Transport for London, 2010)

Pedestrian Comfort Level on Footway



(Pedestrian Comfort Guidance for London: Guidance Document, Transport for London, 2010)

Cycling infrastructure in each street type

(London Cycling Design Standards, Transport for London, 2014)

Movement function

Arterial roads



High roads



City hubs/boulevards



Connector



High streets



City streets



Local streets



Town square



City places



Place function

Design requirements

- Safety
- Directness
- Comfort
- Coherence
- Attractiveness
- Adaptability

**Cycling Level of Service
assessment matrix
based on these six design
outcomes**

**These could be important for
motorcyclists**

(London Cycling Design Standards, Transport for London, 2014)

Designing Streets for Kids



National Association of City
Transportation Officials
www.nacto.org

Global Designing Cities Initiative

Streets for kids should be



SAFE AND
HEALTHY



COMFORTABLE AND
CONVENIENT



INSPIRATIONAL AND
EDUCATIONAL

Source - DESIGNING STREETS FOR KIDS

Children's Needs from Streets

- Reliable mobility choices
- Space
- Places to pause and stay
- Social interaction
- Visibility
- Play and learning
- Security
- A safe environment

Values added for safe routes to school program

What are the needs for Thai students ?

Identifying Challenges

- Fast-moving traffic
- Poor visibility
- Personal safety issues
- Lack of infrastructure
- Vehicle design
- Urban heat island
- Noise pollution
- Poor water management
- Lack of mobility options
- Lack of exposure to nature
- Lack of maintenance

Source - DESIGNING STREETS FOR KIDS

Ten Actions to Improve Streets for Children

1. Think from 95 cm
2. Disincentivize private vehicles
3. Increase transit reliability
4. Build wide and accessible sidewalks
5. Add spaces for play and learning
6. Provide safe cycling facilities
7. Improve pedestrian crossings
8. Lower speeds by design
9. Add trees and landscaping
10. Prioritize children in policies

Example of a safe routes to school program

Engineering

- Walking and bicycling paths
- Sidewalks
- Intersection near school
- Bicycle racks

Education

- Teach pedestrian or bicyclist safety to students
- Practice pedestrian or bicyclist safety skills with students.
- Educate parents about laws requiring yielding to pedestrians and bicyclists
- Develop an “Eyes on the Street” program

Enforcement

- Driver education campaign to encourage slowing down
- Traffic calming
- School safety patrol
- Enforcing no parking in drop-off and pick-up areas

Encouragement

- Hold a Walk to School event
- Conduct a walking/bicycle train program
- Use a Frequent Walker Punch Card
- Promote a Mile program