

Temporal transportation management to decrease the accident risk during the construction of the Tozen subway line.

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Currently, the city of Sendai is constructing the second subway line that will cross the city from east to west. The construction of the Tozai Line began in 2004 with a planned opening date of 2015. Among the projected stations, one is located on Aobayama

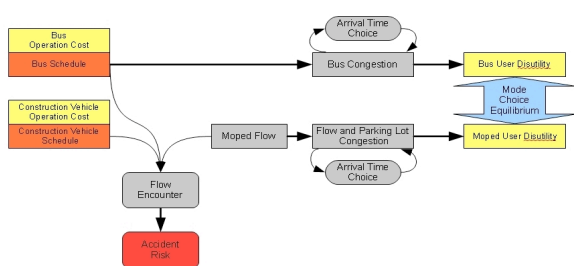
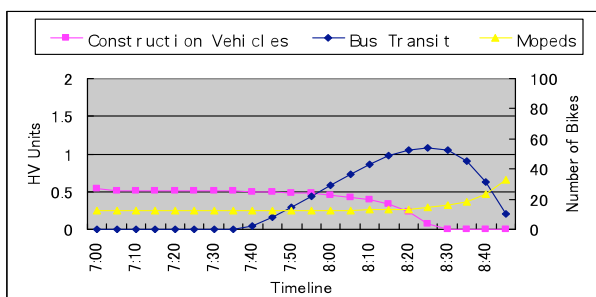


Figure 2 Solution Strategy

Campus. With acknowledge of the construction process involving tunneling, there will be an increment of construction heavy vehicles during this process. Under this type of traffic condition, the probability of a collision changes; and also the probability of a fatality. Reducing the risk of accident in a

temporal scale fits this problem since the change in the traffic composition will not be permanent. This temporal scale solution can be obtained if there is a time dimension control in the bus transit and the construction vehicles. In the case of the construction vehicles, they can be restricted to operate during certain hours, but this restriction can generate costs for transporting into and from the construction site, thus, generating an

operation cost. Meanwhile, the bus transit vehicles can change their schedule time in order to provide a better commuting service. Also, a model shift from moped to bus transit will provide the commuter student more safety during his trip to the university campus. But in order to do



design policies that affect the student decision to commute either by bus or bike their choice behavior must be known. The objective is to minimize the Total Social Cost generated by the Bus Operation Cost, Construction Vehicle Operation Cost and the Accident Risk Cost. The control variables are the Bus Operation and the Construction Vehicle Operation.