V. CONCLUSIONS AND RECOMMENDATIONS

5.1. Conclusions

1. The decision making model has been built with the goal to determine optimal compressed natural gas (CNG) pipeline network which is connecting the source point at the existing pipeline main gas to the CNG station. Based on previous study conducted by PT. Perusahaan Gas Negara (PGN) and data availability, the model considers 6 criteria that have influence in installing the pipe. The criteria are pipe length, the pipe should align with the roads and utility networks, the site plan should minimize building and public services density, private ownership area, and risk exposure. All criteria are scored which are then normalized into 0-1 range.

2. The model uses Geographic Information System in terms of spatial analyst. GIS is used to determine pipe length, building and public services density, area of land ownership and area of disruption due to construction process. For decision making tool AHP is used to get the decision score. Weight of criteria is determined by using full pairwise comparison procedure, while selection of the alternative is determined using rating method.

3. The model has been applied to select the best route among 5 alternatives in Transjakarta Busway Corridor VII Case. The alternatives were Kampung Rambutan, Kramat Jati, Cililitan, Cawang, and Kampung Melayu. The model found that Alternative 2 (Kramat Jati) as the best alternative.

4. The problem that occurred in the application of the model was data availability. For example existing main gas pipe, the data was obtained from PT. Perusahaan Gas Negara (PGN) in hardcopy, so it was difficult to know the precise position of pipe in the field and also it is underground. Another problem was utility data that also place underground such as phone line, power line, and water line.