This work analyses the difference between perceived and computed travel cost data in Recreation Demand Models. Travel cost in this study includes only the cost which stems from the distance which the visitor had to overcome in order to get to recreation site. This study has examined the use of vector model in Geographical Information System as a source for computed data. Three different approaches of calculating travel costs were analysed in single-site model of recreation model. This work also focuses on current composition of travel cost in Travel Cost Method, describes the constraints of this method and consequences for further research.