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Improving Access to Transit Using Road Safety Audits

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Abstract -

This project, "Improving Access to Transit using Road Safety Audits," aims to enhance the safety and accessibility of transit infrastructure by conducting road safety audits (RSAs) along selected transit corridors. The RSAs will identify safety hazards and provide recommendations for mitigating these hazards, thereby improving the safety and accessibility of transit infrastructure. By employing a multi-disciplinary approach, combining field observations, data analysis, and stakeholder engagement, this project will prioritize recommendations for safety improvements based on severity and feasibility. The expected outcomes include improved safety and accessibility of transit infrastructure, enhanced public transportation usage and mobility, reduced traffic congestion and air pollution, and increased community engagement and awareness of road safety issues. Ultimately, this project will contribute to creating safer, more sustainable, and equitable transportation systems.

Key words: RSAs, ITS, TOD

1. INTRODUCTION-

The availability of safe and accessible transportation infrastructure is crucial for promoting public transportation usage, reducing traffic congestion, and enhancing overall quality of life. However, many transit corridors in urban and suburban areas lack adequate safety features, deterring potential users and undermining the effectiveness of public transportation systems. Road safety audits (RSAs) offer a proactive approach to identifying and mitigating safety hazards along transit corridors. By conducting RSAs, transportation agencies and planners can prioritize safety improvements, enhance the accessibility and mobility of transit users, and promote a safer and more sustainable transportation system. This project aims to improve access to transit by conducting road safety audits along selected transit corridors, identifying safety hazards, and providing recommendations for safety improvements.

2. Body of Paper

This project employed a multi-disciplinary approach to conduct road safety audits (RSAs) along selected transit corridors. The RSAs involved a comprehensive review of the existing infrastructure, including road geometry, traffic signals, pedestrian and cyclist facilities, and public transportation infrastructure. The audit team identified potential safety hazards, such as inadequate lighting, insufficient pedestrian crossings, and poorly designed intersections. The team also engaged with local stakeholders, including transit users, residents, and business owners, to gather feedback and insights on the safety concerns and challenges faced by transit users.

The RSA findings highlighted several key areas for improvement, including the need for enhanced pedestrian and cyclist infrastructure, improved lighting and visibility, and optimized traffic signal timing.The project team developed a set of recommendations for safety improvements, prioritized based on severity and feasibility. These recommendations included the installation of pedestrian crossings and signals, the enhancement of lighting and visibility, and the implementation of traffic calming measures. By implementing these recommendations, transportation agencies and planners can significantly improve the safety and accessibility of transit infrastructure, enhancing the overall mobility and quality of life for transit users.

The project also explored the application of innovative technologies and strategies to enhance transit safety and accessibility. For example, the use of intelligent transportation systems (ITS) and data analytics can help identify potential safety hazards and optimize tra fic signal timing. Additionally, the implementation of transit-oriented development (TOD) strategies can help promote mixed-use development and reduce the need for personal vehicles, enhancing the overall sustainability and accessibility of transit infrastructure. By leveraging these innovative approaches, transportation agenciesand planners can create safer, more accessible, and more sustainable transit systems that meet the evolving needs of transit users..

Technological solutions:

1. Intelligent Transportation Systems (ITS): Implement ITS technologies such as traffic signals, pedestrian detectors, and traffic cameras to monitor and manage traffic flow, reducing congestion and improving safety.
2. Data Analytics: Utilize data analytics tools to analyze data from various sources (e.g., traffic cameras, sensors, and pedestrian detectors) to identify safety hazards and optimize traffic signal timing.
3. Mobile Apps: Develop mobile apps for transit users to report safety concerns and provide real-time feedback on transit infrastructure.
4. Geographic Information Systems (GIS): Use GIS mapping to identify high-risk areas and visualize safety data, enabling targeted interventions and improvements.
5. Internet of Things (IoT): Leverage IoT sensors and devices to monitor and manage transit infrastructure, such as pedestrian crossings, traffic signals, and bike lanes.
6. Artificial Intelligence (AI): Apply AI algorithms to analyze data from various sources and predict potential safety hazards, enabling proactive interventions.
7. Virtual Reality (VR) and Augmented Reality (AR): Utilize VR and AR technologies to simulate and visualize transit infrastructure, enabling safer and more efficient design and testing.
8. Smart Traffic Management: Implement smart traffic management systems that can optimize traffic signal timing, reduce congestion, and improve safety.

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9. Pedestrian Detection Systems: Install pedestrian detection systems that can detect pedestrians and alert drivers, reducing the risk of accidents.
10. Real-time Information Systems: Implement real-time information systems that provide transit users with accurate and up-to-date information on transit schedules, routes, and safety alerts.

These technological solutions can help improve the safety and accessibility of transit infrastructure, enhance the overall transit experience, and reduce the risk of accidents.

Fig-1

3. CONCLUSIONS

In conclusion, this project demonstrated the effectiveness of using road safety audits to improve access to transit. By conducting comprehensive safety audits along selected transit corridors, identifying potential safety hazards, and providing recommendations for safety improvements, this project helped to enhance the safetyand accessibility of transit infrastructure. The implementation of innovative technological solutions, such as intelligent transportation systems, data analytics, and pedestrian detection systems, further contributed to improving transit safety and accessibility. This project's findingsand recommendations can serve as a model for other cities and transportation agencies seeking to improve access to transit and reduce the risk of accidents. Ultimately, this project highlighted the importance of prioritizing safety and accessibility in transit infrastructure design and operations, and demonstrated the potential for road safety audits to drive meaningful improvements in transit safety and accessibility.

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REFERENCES

[1] Nilam Phadtare, Madhav Chinchole,[15] (Aug -2017) "Study ofRoad Safety Audit in municipal

areas". Vol. 4 issue 8 pg 409-412.

[2] Yogita. S. Jadhav, Prof. Milind M. Parade. (June 2017) "Alternative solution on kiwalephata to Aundh

BRTs Route."Vol. 4 issue 6 pg 979-983.

[3] www.wikipedia.org

[4] www.googlescholar.com

[5] www.springer.com

[6] www.irte.com

[7] www.sciencedirect.com.

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