

Comprehensive Review on Capacity Analysis of Rotary Intersection

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Abstract: *Rotary intersection, which is a special type of at-grade intersection, where all converging vehicles are forced to move round a central island in clock-wise direction. Increasing trends of traffic in urban area is a major concern in all the cities in India. The heterogeneous traffic are more diverse in nature due to lane changing and lack of lane discipline characteristics of driver's in India. The rotary intersections are of the most vital components of urban roadway network. Intersection is one when either three or more road meets or intersects each other. It has been observed that the entry capacity of vehicles become comparatively lower at intersection than that of the straight portion of the road due to reduction in speed. The traffic flow characteristics at rotary intersections are study to observe the performance of intersection. The capacity of the roadway rotary depends on the flow at different legs approaching the rotary. The present traffic scenario is usually used to characterize the present traffic condition to access the different parameters at different types of intersection. The crossing of vehicles is avoided by allowing all vehicles to merge into the streams around the rotary and then to diverge out to the desired radiating road. Thus the crossing conflict is eliminated and converted into weaving maneuver or a merging operation from the right and diverging operation to the left. In this paper, an comprehensive review is presented on capacity analysis of rotary intersection.*

Keywords: Rotary intersection, mixed traffic condition, Capacity

REFERENCES

- [1]. Sitesh kumar singh, Karan Prabhakar "Statistical Analysis of Traffic of Rotary Intersection" International Journal of Engineering Science and Research Technology. ISSN 2277-9655
- [2]. Veethika Gomasta, Mohit Malviya, Abhishek Singh and Saleem Akhtar, "Design and Analysis of Intersections for Improved Traffic Flow at Bhopal-Case Studies of Jyoti Talkies Square and Vallabh Bhawan Roundabout" | International Journal of Current Engineering and Technology, Vol.5, No.6 (Dec 2015)
- [3]. Sandeep B. Rajurkar, Mithil S. Soni, Mohan M. Dusane, Kunal A. Mahale, Amar S. Gorule "Study and design of Roundabout at Charkop Market, Kandivali (West)" International Journal of Engineering Research In Mechanical and Civil engineering (IJERMCE) ISSN (Online) 2456-1290
- [4]. Ramu Arroju , Hari Krishna Gaddam, Lakshmi Devi Vanumu, K. Ramachandra Rao," Comparative evaluation of roundabout capacities under heterogeneous traffic conditions", J. Mod. Transport. (2015) 23(4):310–324
- [5]. Debasish Das , Prof. Mokaddesh Ali Ahmed , Saikat Deb , "A case study on performance analysis of un-controlled intersection in Silchar, Assam" Conference: International Conference on Transportation Planning & Implementation Methodologies for Developing Countries (11th TPMDC), December 2014
- [6]. Akshat Upadhyay, Bharat Tyagi and Vaishnavi Bansal, "Traffic Volume and Congestion Analysis at Golf Course Rotary Intersection", International Journal of Management, Technology And Engineering Volume 8, Issue X, OCTOBER/2018 ISSN NO : 2249-7455 Page No:2563

- [7]. Rakesh Kumar Chhalotre and Dr. Y. P. Joshi, "An Evaluation of Rotary Intersection: A Case Study of Prabhat Square Raisen Road Bhopal" International Journal of Engineering Development and Research, Volume 4, Issue 3 (2016).
- [8]. S.Vasantha kumar, Himanshu Gulathi and Shivam Arora "Design of rotary for an uncontrolled multi-leg intersection in Chennai" IOP Conference series material sci. Engg.263 032030
- [9]. Sonalika Maurya, Mr. Ajeet Singh "Efficiency of rotary intersection at authority Chowk Greater Noida" International Journal Of Advanced Research In Science Vol. 5, Issue 5, May 2018
- [10]. Parth M. Pande, Srinath Karli "Design of Rotary Intersection As an alternative To Four arm signalized intersection of Urban Area" IJSRD- International Journal For Scientific Research and Development. Vol. 4, Issue 03,2016 ISSN: 2321-0613
- [11]. V.B. Shrirame and Prof. S.R. Nagoshe, "Design and analysis of Rotary Intersection at arvi naka, wardha" International Journal of Research in Science & Engineering Volume: 3 Issue: 2 March-April 2017.
- [12]. Ishanya P, Shriram Marathe, Y R Suresh, "A STUDY ON ROTARY INTERSECTION AT MANGALURU – A CASE STUDY OF NANTHUR JUNCTION " , ISSN (PRINT): 2393-8374, (ONLINE): 2394-0697, VOLUME-4, ISSUE-5, 2017
- [13]. Siteshkumar singh, Karan Prabhakar "Statistical Analysis of Traffic of Rotary Intersection" International Journal of Engineering Science and Research Technology. ISSN 2277-9655
- [14]. Tom V. Mathew and K V Krishna Rao "Traffic Rotaries". NPTEL
- [15]. V.B. Shrirame and S.R. Nagoshe, "Design and analysis of Rotary Intersection at arvinaka, wardha" International Journal of Research in Science & Engineering Volume: 3 Issue: 2 March-April 2017
- [16]. Shaikh Vasim Abdulsalim , Khushbu Bhatt and Siddharth Gupte, "Analysis of Rotary Intersection at Vadodara (India)", IJSTE - International Journal of Science Technology & Engineering | Volume 3 | Issue 08 | February 2017
- [17]. Dayananda H S, Manoj P, Ram Kumar P, Gagana D "Simulation of Rotary Intersection at K. R. Hospital Junction" International Journal of Engineering and advanced Technology(IJEAT) ISSN: 2249-8958, Volume-8 Issue-5, June 2019
- [18]. Gaurav D. Hingwe , Miss. K. P. Nichat, "STUDY OF DESIGN ELEMENTS OF ROUNDABOUT AT INTERSECTION FOR EFFECTIVE TRAFFIC CONTROL" International Research Journal of Modernization in Engineering Technology and Science Volume:02/Issue:06/June-2020
- [19]. Ankit Pandey, Vaibhav Dubey," Design and Analysis of Rotary Intersection at Taat Mil Chauraha Kanpur", IJCRT, © 2022 IJCRT | Volume 10, Issue 4 April 2022 | ISSN: 2320-2882
- [20]. Ayush Verma, Deerendra Varshney, "Performance and Analysis of Gol Chakkar Kirti Stambh Rotary Intersection Greater Noida, India", International Research Journal of Engineering and Technology (IRJET) e-ISSN: 2395-0056 Volume: 07 Issue: 06 | June 2020