Molins de Rei is a municipality located in a strategically important point of the road network of the surroundings of Barcelona, in an area with great concentration of first and second order ways. The opening of a motorway junction in the A-2 near the industrial estate “el Pla” in 1997 and the beginning of the Baix Llobregat motorway in December of 1998, have determined some changes in the mobility of the city that supposed the recovery for the town of the N-340 (particularly, the Valencia’s Avenue or Barcelona’s Avenue according to the location in the urban network), that until then supported much crossing traffic. In consequence, the traffic intensities of the main roads, that are the N-340 and c/Jacint Verdaguer, diminished considerably.

The state of the intersections of these main ways doesn’t give answer to the changing needs of mobility demand. That means, the current cycles are too longer or the times are not well distributed between the different road users (pedestrians). Also many traffic lights are not coordinated between them and produce unnecessary queues in the city. The present document analyses and looks for practical solutions to improve the present situation of the road network and to optimise the coordination of the traffic light system in the N-340 and c/Jacint Verdaguer intersections, adapting the traffic plans to the new situation.

On the other hand, the demographic increase of the last years has caused a greater occupation of the territory, increasing the dispersion of the city and creating new needs of mobility. This has lead to an increase of the use of the private vehicle. To reduce this use and to foment a more sustainable mobility with the introduction of the public transport, it is incorporated a new urban bus line that covers all the urban nucleous of the city. In order to give more competence and efficiency over the private vehicle, it has been thought in giving traffic light priority to the collective transport of surface. In this project different systems of priority have been studied and analysed for the particular case of Molins de Rei, considering the low journey frequency and the intersections with traffic lights through wich it circulates; always without damaging the general plans of traffic regulation.

The thesis also includes the viability study of new traffic lights intersections in the confluence of c/Jacint Verdaguer-c/Onze de Setembre and c/Primer de Maig-c/Francesc Layret according to the existing demand.

In order to carry out this work, the document has been divided in different parts.

Firstly the previous studies of mobility and about the public transport realized by Fundación RACC (1999) and INTRA (2001) have been reviewed and updated. When there wasn’t information about the traffic intensities, the corresponding field work has been made. At the same time an inventory and analysis of the intersections with traffic lights have been made and have seted out alternatives of improvement (consulting the companies ETRA and ACISA). Once obtained all the information, the computer science program SYNCHRO 4.0 has been used to make the study of the regulation plans as well as the coordination of the main roads. The proposals of improvement and the adopted solution are explained in the present study.

In the following block the different methods of public transport priority have been studied and the most adequate proposal for the city of Molins de Rei has been made.

Finally, an approximate budget for the hiring of the propose improvements works has been elaborated. For his accomplishment it has been consulted to the companies ETRA and ACISA, that are representative in the traffic light system of the municipality.