

**Parking Study
For
Rolesville Dental Office**

Rolesville, Wake County, North Carolina

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Introduction:

The focus of this study is a proposed 4,260-square foot professional dental office development. The newly adopted LDO requires parking to be provided at a rate of 2.00 spaces per 1,000 square feet for dental offices. This equates to a maximum of 9 spaces. The dental operator, based on their data from more than 1,600 offices across the country, is proposing a site plan that provides 31 parking spaces, or approximately 7.28 per 1,000 square feet. The 31 parking spaces is inclusive of the 2 required handicap spaces.

Analysis:

Data Set A (Experiential Data):

Our client is part of a group of over 1,600 dental clinics nationally. These offices range in size from 1,000 SF to 12,000 SF. Based on their experience and data running such a large group of offices, they have developed and adopted a design standard on new-build offices of 1 space per 150 SF or 30 spaces (28 regular spaces plus 2 handicap spaces) to avoid employees having to park on adjacent properties or patients not being able to find a parking space or anyone parking in an unsafe manner.

This proposed office will have 14 patient chairs and will be staffed with 16 employees when the office is running at full capacity. Based on the assumption that one space per chair and one space per employee is necessary, the 31 spaces will be needed at full capacity. In addition, since 2 of the 31 spaces are designated as handicap only 29 spaces are available to all patients and employees. This also does not account for appointments that run long or patients who show up early for an appointment.

Data Set B (ITE Trip Generation Manual, 10th Edition Data)

The amount of parking needed by the dental office can best be independently verified by comparison with similar sites external to the owner's group of dental clinics. The Institute of Transportation Engineers (ITE) has compiled data from thousands of studies for various land uses, independent variables, and study periods and published the results in *Trip Generation Manual, 10th Edition*. The proposed development is categorized as ITE Land Use 720: Medical-Dental Office Building. Table 1 shows the range of data from the ITE manual collected across numerous detailed engineering studies of medical and dental office buildings. Table 2 illustrates the trips expected to be generated by the proposed development based on the data presented in ITE for the office with 16 employees.

ITE Code	Trips per Employee Fitted Curve to data		Entering/Exiting (%)	
	AM	PM	AM	PM
720 – Medical-Dental Office Building	0.40-8.00 $T=e^{0.62\ln(X)+1.61}$	0.58-6.75 $T=1.03(X)+5.73$	61% / 39%	40% / 60%

ITE Code	Trips		Entering/Exiting	
	AM	PM	AM	PM
720 – Medical-Dental Office Building	28	22	17 / 11	9 / 13

Using the fitted curve equation from the studies performed on Medical-Dental Office buildings, the ITE Trip Generation Manual shows a peak of 28 AM trips are to be expected in the peak hour of the office.

Based on the site's topo and layout, there are not expected to be any shared parking scenarios in these commercial lots that would create a reduction in the 28 peak trips. The 31 total (29 non-ADA) spaces requested reflect a relative equivalent to the ITE manual's findings.

Conclusion:

Based on the results of both sets of data available from the independent studies performed by the Institute of Transportation Engineers and the data collected by the owner across their more than 1,600 offices nationwide, the 31 proposed parking spaces are well within the ranges to be considered warranted and needed. The proposed parking lot provides adequate parking capacity for the peak demand for the development.



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