

Streets: Ageing behaviour, intervention limits, loss of value



Since 2005, Zurich has been aiming for sustainability in their approach to road maintenance. We examined the relevant data for resource allocation, depreciation and road quality over a 15-year period to determine the degree to which the city has achieved its goal.

The city of Zurich's Department of Public Works has been assessing the quality of the city's more than 440-mile network of roads in accordance with Standard SN 640,925 since 2003. Data on the quality of the road network is now available for six assessment cycles. Based on these and other data, we completed the following tasks for the Zurich Department of Public Works:

- We examined how long it takes the roads to age when exposed to various loads.
- We examined the relationship between the quality of the roads and the regular completion of maintenance measures, paying special attention to roads where maintenance measures were carried out by third parties (e.g. water works and public transportation companies). This gave us a basis for deriving average utilization times.
- These utilization times and the relevant replacement value data enabled us to ascertain the annual rate of depreciation for Zurich's road network.
- Maintenance measures and repairs counteract the aging process. An evaluation of the corresponding cost data showed the amount Zurich has invested in road maintenance throughout the past several years.

The comparison of the allocated financial resources and the

Client

The City of Zurich, Department of Value Maintenance

Facts

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| Period | 2018 - 2019 |
| Project Country | Switzerland |
| Road surface area | 5.6 million m ² |
| Replacement value | CHF 2.2 billion |
| Annual investment volume | CHF 51 million |

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value of depreciation over the last 15 years indicates that the two essentially balance out. The status reports submitted since 2003 also show that the average quality of Zurich's roads has remained largely constant. This confirms that Zurich has succeeded in maintaining a sustainable road-maintenance program throughout the last 15 years.