Chip seal, also known as seal coat, is one of several valuable preservation treatments for roads, which usually receive light to medium traffic volumes; it has also performed well on higher-volume roadways and is usually placed over existing asphalt concrete pavement. Chip seals are placed by spraying the pavement with a binder, either an asphalt emulsion or a hot applied binder, from a distributor truck, and then immediately applying a uniform application of a cover aggregate (chips or screening) using a self-propelled chip spreader. The aggregate is rolled as soon as possible to ensure embedment and adhesion of the aggregate to the fresh binder. This manual presents the best practices for design and construction of chip seals, including scrub seals and Geosynthetic Reinforced Chip Seals (GRCS), and it further includes guides for troubleshooting construction problems. It also includes guide specifications for both emulsion and hot applied chip seals.

**Study Methods**
The project consisted of conducting a detailed literature review followed by the development of a detailed manual to help agencies and industry select the right chip seal treatment, design and construct the treatment, and provide guides for quality assurance. The manual also includes detailed troubleshooting guides in case something goes wrong during construction for chip seals.

**Key Findings**
The key findings are the best practices for the design and construction of chip seals. Most needed information about chip seals is in this document, which can be easily used by both local agencies and industry.
**Policy Recommendations**
This manual, if followed, should prevent most failures in the construction of chip seals. It is imperative that better specifications be used to ensure better performance and fewer failures.

***All agencies need to have a pre-construction meeting and make sure the contractor submits a quality control plan and the agency does provide for certified inspectors to monitor the construction.***

**Photo**
Quality assurance (QA) establishes the core elements required to achieve quality materials and workmanship for construction projects as shown in the figure below. QA has been required over the last 20 to 30 years in hot mix asphalt, but it is still developing for pavement preservation treatments.

**About the Authors**
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