

Case Study Analysis of the Sequencing of Asphalt Paving for the San Luis Obispo Regional Airport Runway Rehabilitation Project

Research Methodology:

- Qualitative Data Collection through Semi-Structured Interviews
- Quantitative Data Collection through QTO Analysis of Paving Plans and Quantities

Results: The original method in which the SLOCRA was paved with 12 longitudinal paving stretches was the most efficient way to pave the area.

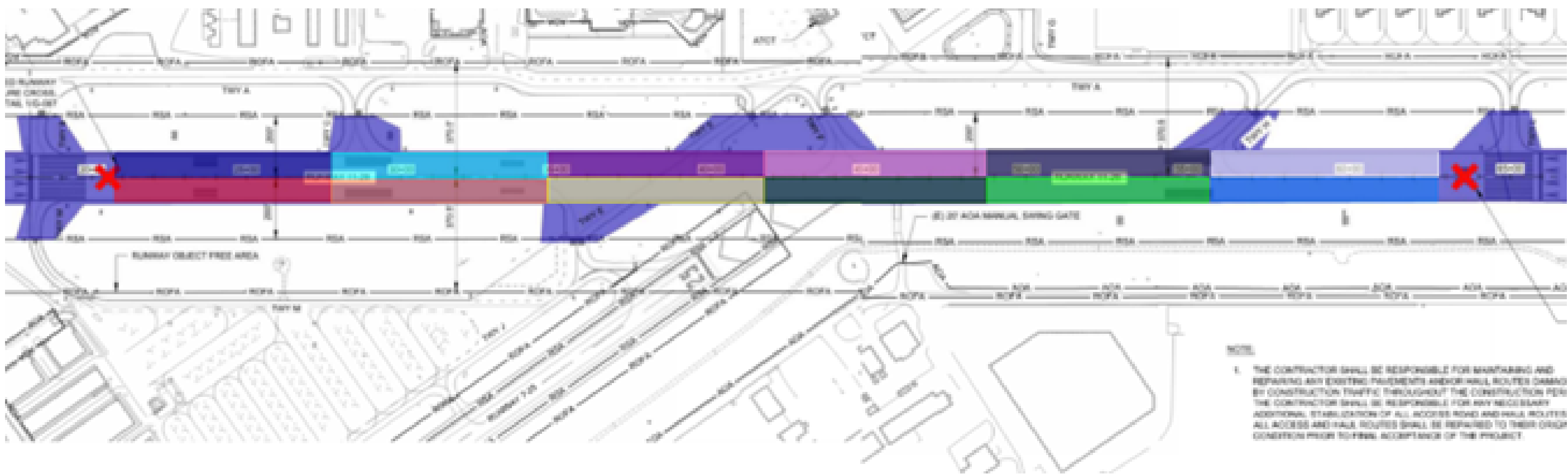
While Alternative 2 is the best overall way to pave the area, it is logistically impossible.

The following analysis of the San Luis Obispo Runway Rehabilitation Project is an examination of the asphalt paving sequence used to pave the 11-29 Runway and associated taxiways. The primary objective of this case study analysis is to gain insight as to how the pavement sequencing could have been done differently to decrease the potential for joint compaction issues between paving areas while still maintaining high efficiency and adhering to work limitations. To address issues encountered with the original paving sequence related to joint compaction, there are two alternative paving plans that this analysis will apply: wider paving areas with less longitudinal jointing and longer work closures. In contrasting the alternative pavement sequencing methods to the original paving sequence of the project, it will be possible to determine if a more efficient method could have been used and overall look at how the knowledge gained throughout this analysis could be applicable in future asphalt paving operations.

Keywords: Airport Construction, Asphalt Paving, Joint Compaction, Site Logistics, Sequencing



Alternative 1: Widened Paving Segment Sequencing Alternative

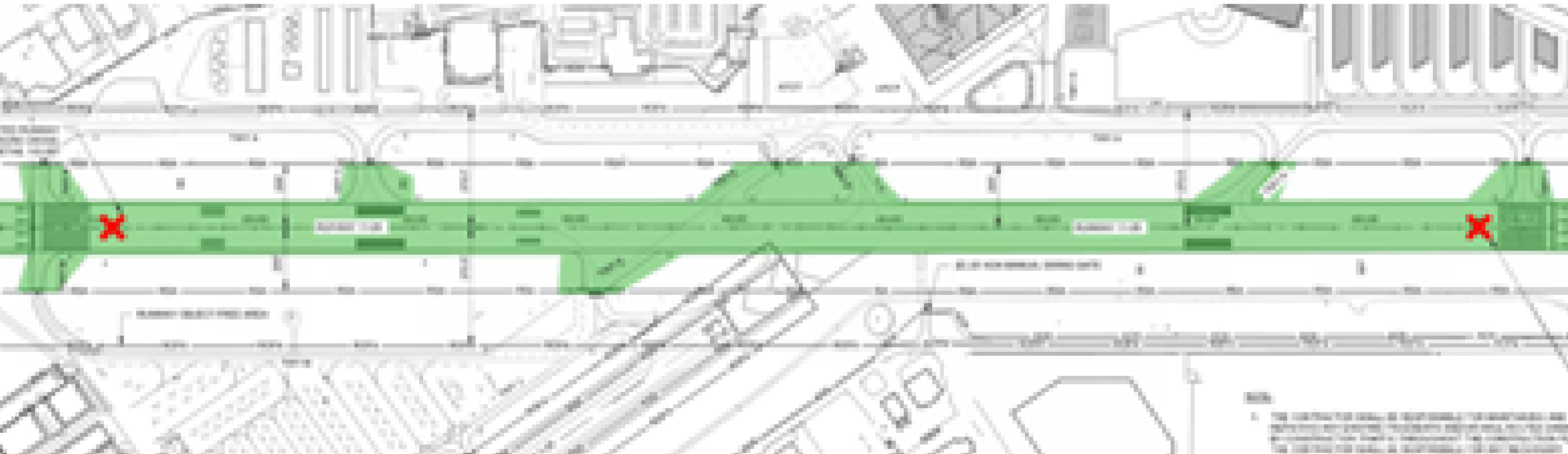


Brief Description: Breaking the runway into 12 paving areas to be completed within a work period (8pm-4am). This alternative divides the runway into twelve paving areas that are 75 feet wide (breaking at the crown of the runway) and 700 feet long.

Pros: Reduction in the length of asphalt to be cold-jointed, reducing joint compaction issues.

Cons: No time or cost savings, horizontal joints on runway creating washboard effect.

Alternative 2: Extended Airport Closure Sequencing Alternative



Brief Description: This paving sequencing alternative for Phase 2 of the construction of the 11-29 Runway encompasses the entire stretch of runway spanning from station 21+00 to 63+00, covering an overall 630,000 SF of area. The entire stretch would be paved in 96-hours.

Pros: Faster, Simpler, less potential for joint-compaction issues.

Cons: Labor/Equipment Exhaustion and not logistically possible with FAA requirements