

RESEARCH PROBLEM STATEMENT #DC-511

I - Problem Title

Re-vegetation: Anticipated Plant Community and Re-vegetation Strategy (LAP-05)

II – Research Problem Statement

Many times the best way to stabilize slopes is to establish a low maintenance self-perpetuating plant community. No methodology exists to determine which particular plant community should be established on an individual site, and provide the steps necessary to establish that plant community.

III – Objective

This project will develop a set of methodologies to guide practitioners in determining and establishing self-perpetuating plant communities on slopes. Having this ability will help lower the cost of long term erosion control and maintenance of slopes. The Caltrans goal addressed is Performance.

IV – Background

Establishing and maintaining slope stability is important to the Department. Eroding slopes create problems for water quality and require the significant expenditure of maintenance funds. An important means of stabilizing slopes is to develop low maintenance self-perpetuating plant communities that significantly reduce the amount of erosion from the slope. A set of methodologies needs to be developed and validated to successfully establish plant communities and re-vegetate the various climate areas (coastal, arid, mountain). These methodologies would include but not be limited to the following:

- * Selection of the proper vegetation community that will grow on and provide effective erosion control for a particular slope,
- * How to properly establish the plants for the pioneer and final species,
- * How to allow for successful plant succession to take place,
- * How to properly sustain the plant community with the minimum expenditure of human and monetary resources.

This project will build on previous and current landscape research. The methodologies will be developed from the results of previous and existing research as well as from new fieldwork. Validation will be from new field sites and from previous research sites that have been utilized and not revisited in the recent past.

V – Statement of Urgency and Benefits

This research is urgent for the department to be able to meet its commitments in water quality and for reducing the costs of maintaining slopes. The benefit of this research will be to be able to properly re-vegetate slopes.

VI – Related Research

Other re-vegetation research is related to this project. The results of previous and ongoing research can be rolled up into this project. Portions of the methodologies will be developed from the results of already completed and ongoing research.

VII – Deployment Potential

The research product will be a set of methodologies that practitioners can use in designing establishing and maintaining plant communities on slopes. This project has immediate deployment potential.