

Developing and Partially
Implementing Traffic Calming
Measures to Reduce Cut-through
Traffic on Forest Lane in
Pinetop-Lakeside, Arizona

Practicum Project for the degree of
Master of Science in Applied
Geospatial Sciences

Kathrine M. Nunn

ABSTRACT

- Residential street
- Complaints about cut-through traffic
- Cut-through traffic from and to subdivisions
- Practicum Project Purpose
 - Evaluation of resident perceptions
 - Research of traffic calming measures
 - Potential traffic calming solutions

OUTLINE

1. Introduction

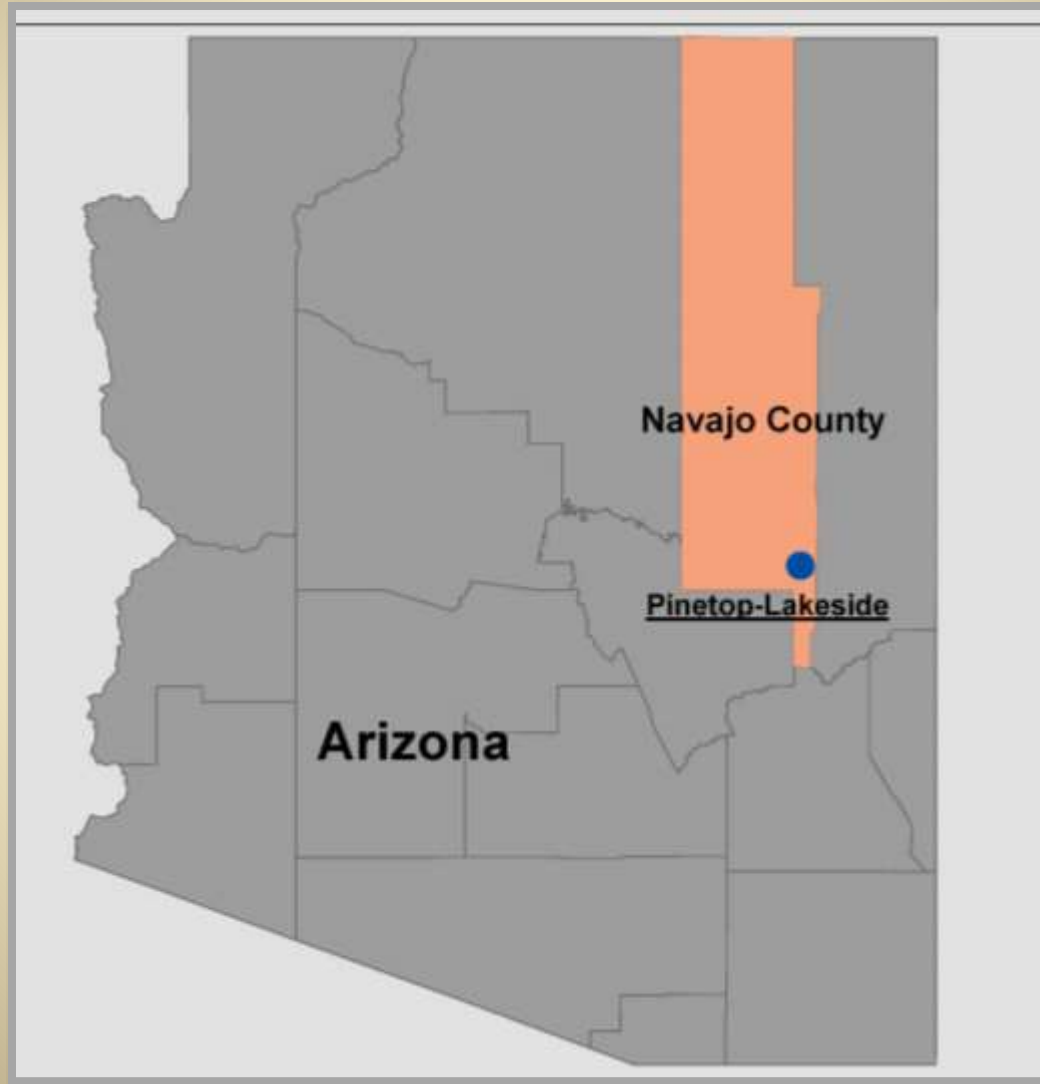
2. Practicum Process
 - a. Phase I
 - b. Phase II
 - c. Phase III

4. Conclusions

INTRODUCTION

- Purpose
 - Find potential solutions to reduce cut-through traffic
- Components
 - Public Input Meetings
 - Council Decision Request
 - Presentation at Town Council Meeting

BACKGROUND



PINETOP-LAKESIDE

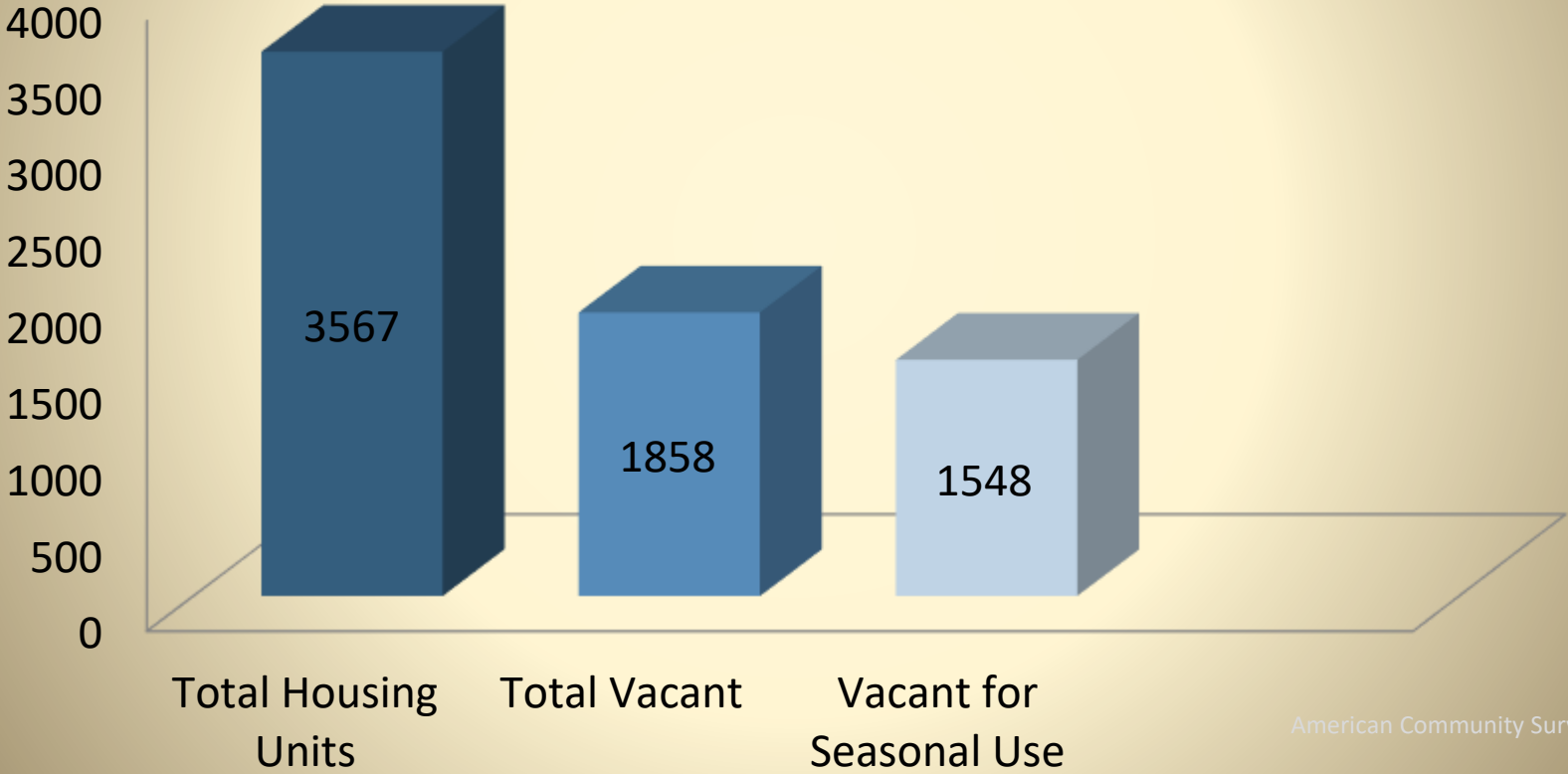
- Elevation approximately 6,800 feet
- Attractive location for valley residents
- Large number of part-time residents



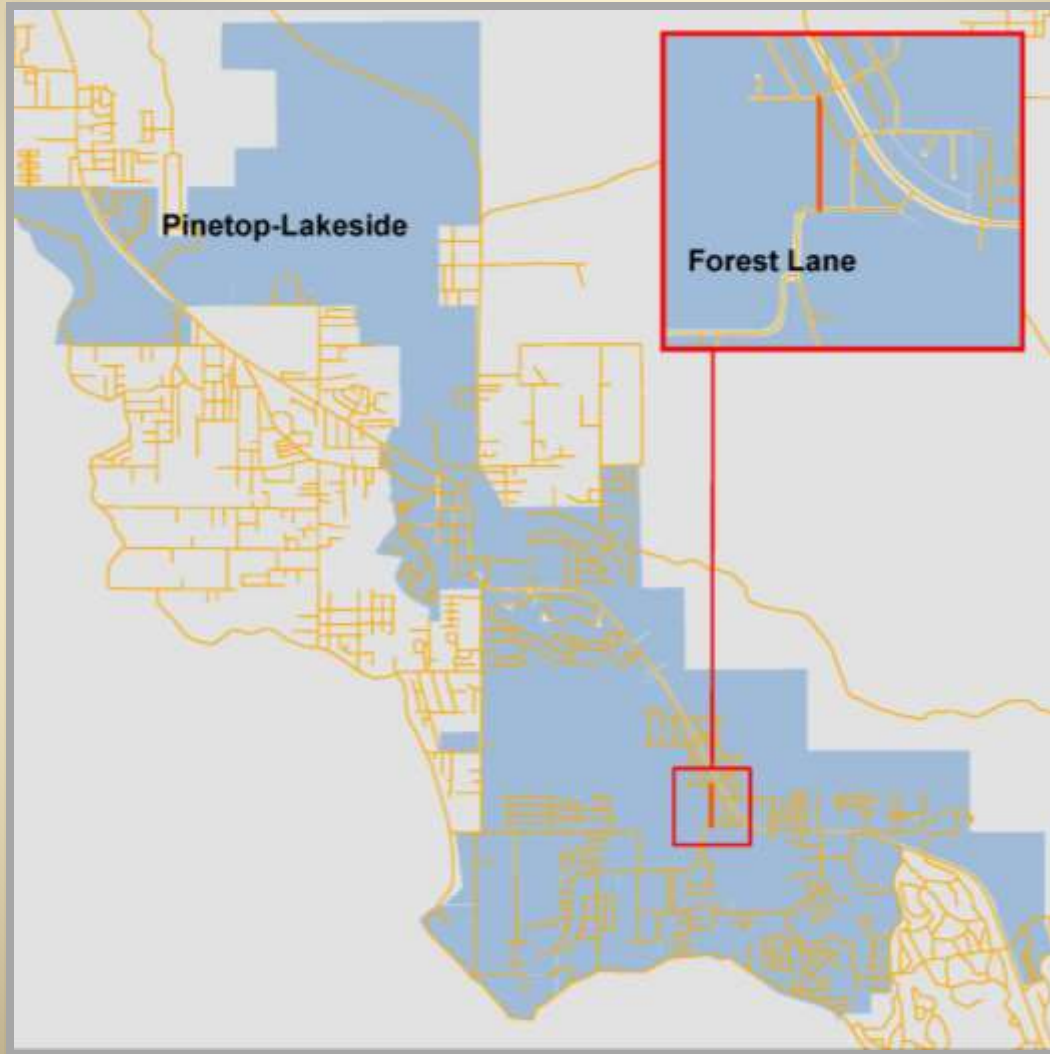
POPULATION

- Approximately 2,300 at time of incorporation in 1984
- Currently approximately 4,282 (2010 Census)
- Strong fluctuation of population numbers between summer and winter months
- In 2014 approximately 83% of vacant housing units were available for seasonal use

HOUSING UNITS IN 2014



FOREST LANE



- Residential street
- 21' wide
- Approximately 0.25 miles long
- 2 travel lanes and no sidewalk or bike lane



SUBDIVISION TRAFFIC



RESIDENTS' PERCEPTION

COMPLAINTS

- High traffic volume
- Speeding

SOLUTIONS

- Turn Forest Lane into a dead-end street



PRACTICUM PROCESS

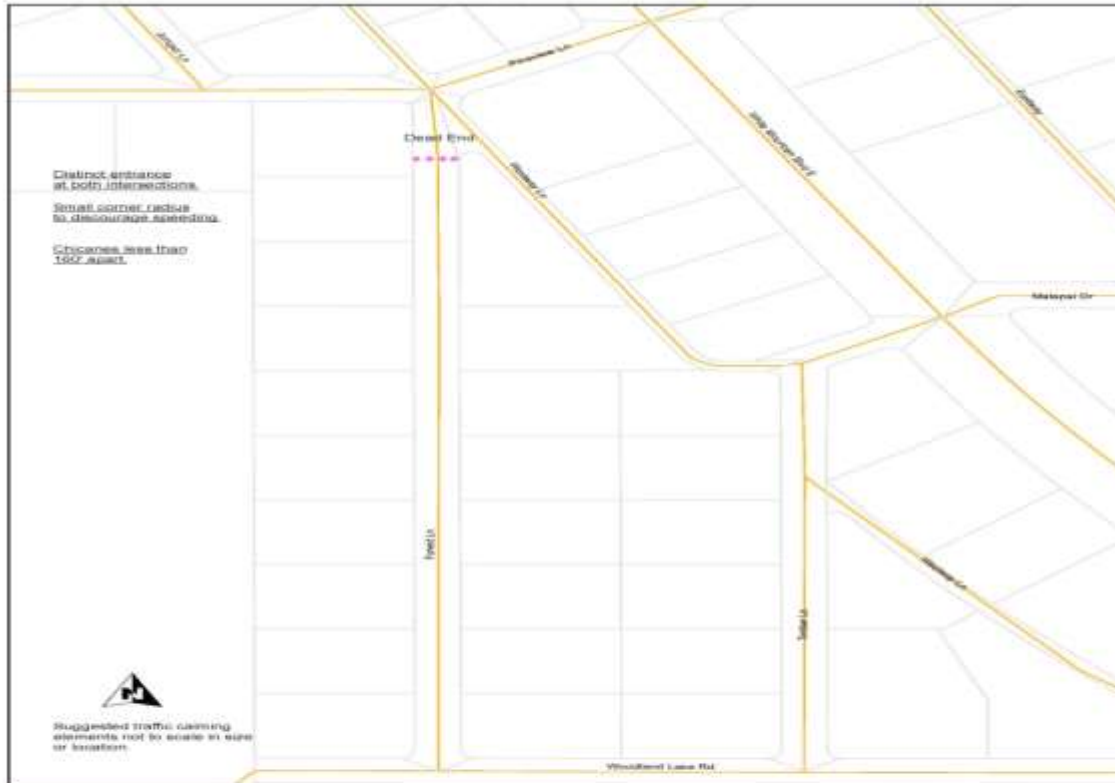
- Development of potential design solutions
- Phase I
 - Development and implementation of temporary traffic calming measure
- Phase II
 - Permanent implementation of traffic calming measure
- Phase III
 - Temporary change in traffic pattern

PHASE I

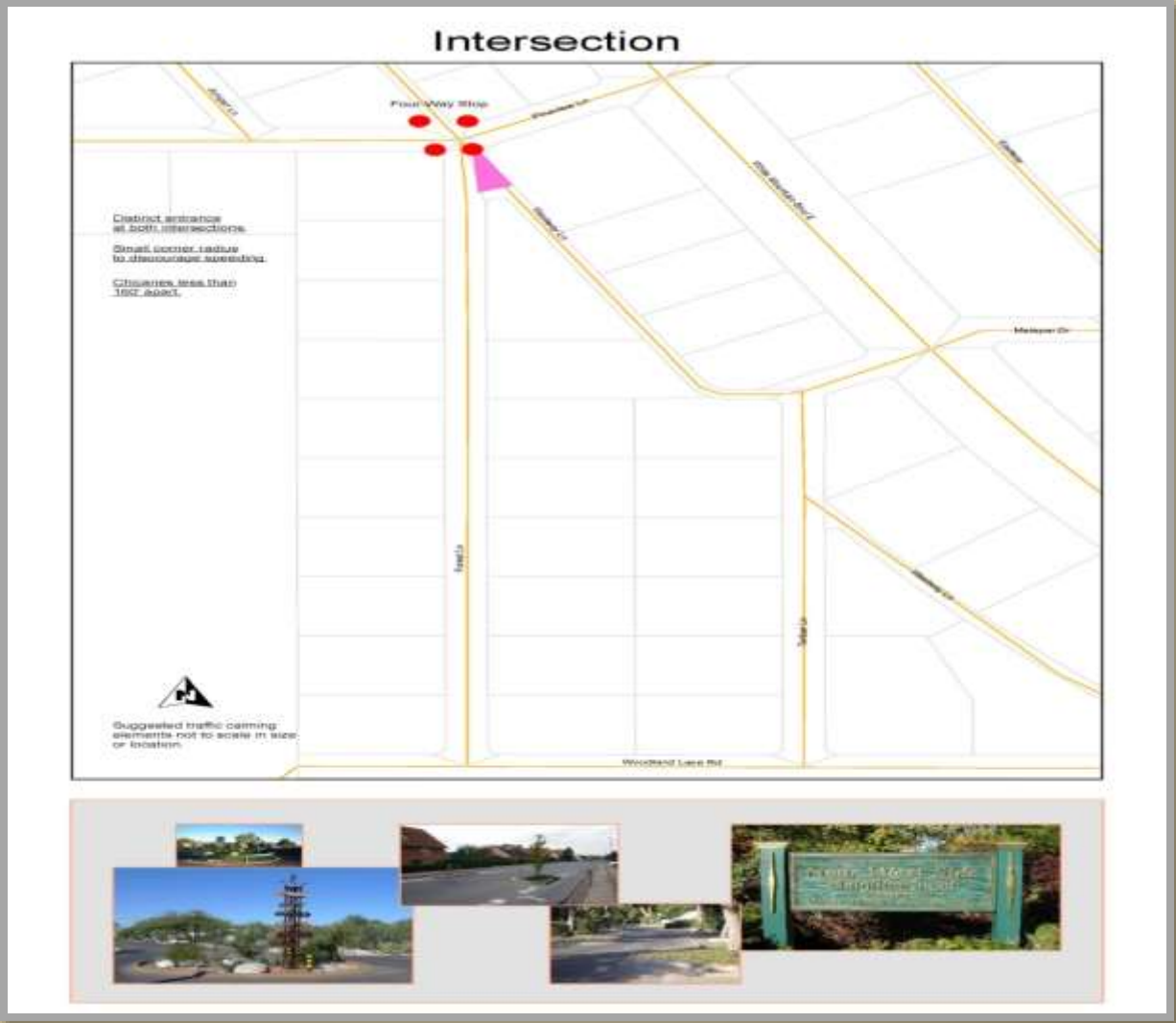
- Potential design solutions to reduce traffic volume
- Public input meeting
- Installation of temporary traffic calming measure
- Traffic count

DEAD END

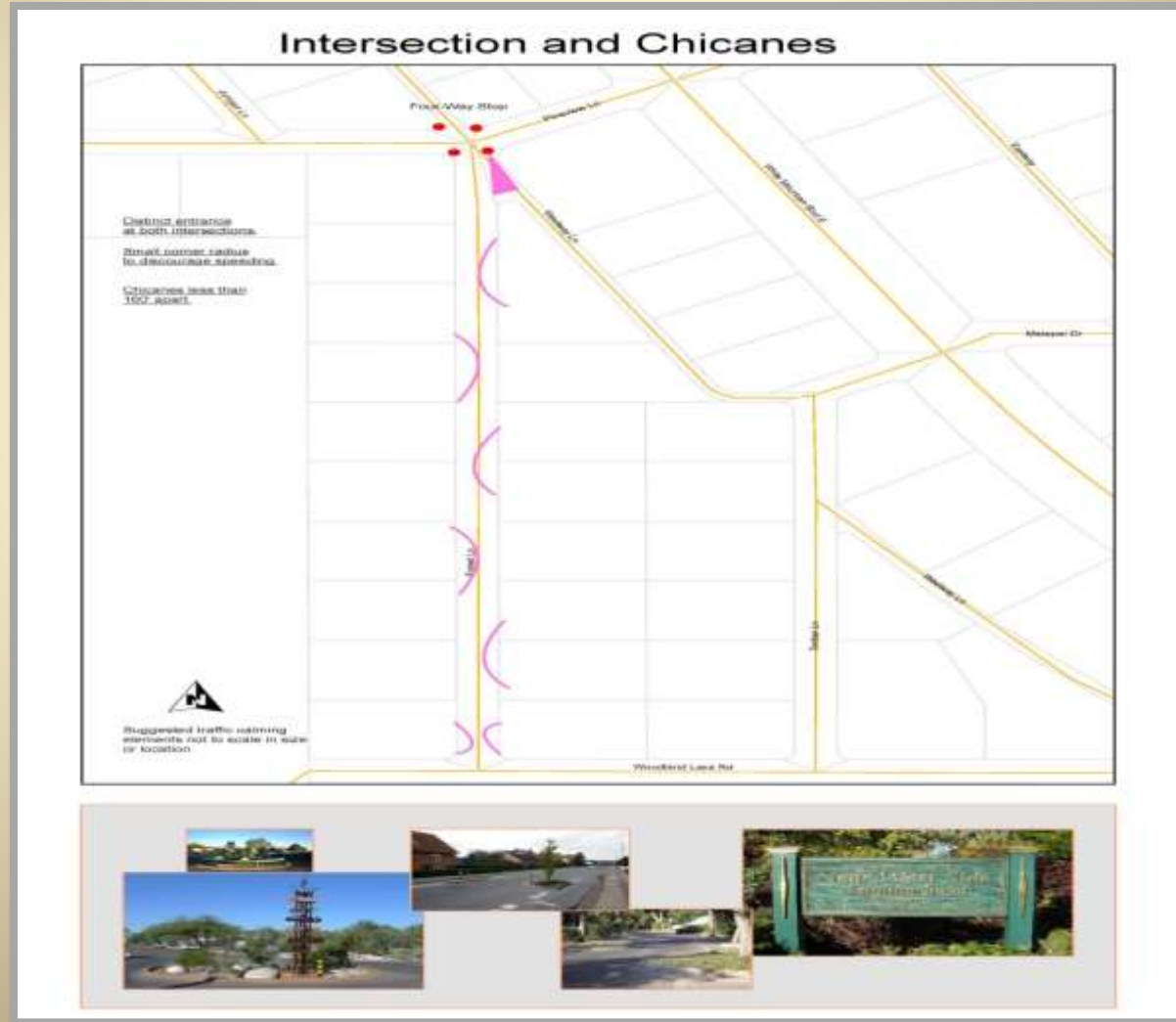
Dead End



INTERSECTION MODIFICATION



CHICANES IN ADDITION TO INTERSECTION MODIFICATION



WHAT IS THE ISSUE? SPEED OR VOLUME?

- Pinetop-Lakeside Police traffic count in winter 2014/2015
 - Traffic volume approximately 400 vehicles/day
 - Only two or three cars over speed limit



It's traffic volume!

PUBLIC INPUT MEETING

- June 2015
- Approximately 30 residents
- Forest Lane residents ask for dead end
- Neighborhood disagrees
- “Streets are for everyone”



TEMPORAY DESIGN

Forest Lane Intersection Modification



Before: 5-Way Intersection



After: 4-Way Intersection

TEMPORARY DESIGN



RESULTS

- Drivers experienced change in traffic pattern
- Traffic count resulted in approximately 450 cars per day
- Intersection was changed from five-way to four-way intersection
- Angle of modification and stop signs required wider turns for vehicles pulling trailers

PHASE II

- Permanent intersection modification
- Traffic count did not show the expected volume reduction
- Council Decision Request for Speed Cushions

PERMANENT INTERSECTION MODIFICATION



WHY PERMANENT, IF TRAFFIC VOLUME WAS NOT REDUCED?

- Intersection was a five-way intersection
- Safer as four-way intersection with stop signs
- Wider angle and stop signs inconvenience drivers with larger trailers to cut through Forest Lane

SPEED CUSHIONS

- Convenient spacing for emergency responders
- Would inconvenience drivers to cut-through Forest Lane
- 30% reduction in traffic volume (Traffic Calming: State of the Practice)
- Flexible



TOWN COUNCIL

- Town Council Decision Request to purchase speed cushions for Forest Lane
- Town Council asked for cheaper solutions
- Staff to perform traffic count
- Staff to implement No-Left-Turn signs

PHASE III

- Temporary change in traffic pattern
 - No-Right-Turn sign
 - Stolen after 3 days
 - Never reinstalled

PHASE III

- Traffic count shows low numbers
- Less population during winter months
- Summer counts are approximately 70% higher



CONCLUSIONS

- Town Code and General Plan support traffic calming
- Political environment did not allow to create a precedent for speed cushions
- High fluctuation in traffic counts between summer and winter
- Potential traffic light may divert traffic from Forest Lane

THANK YOU.

