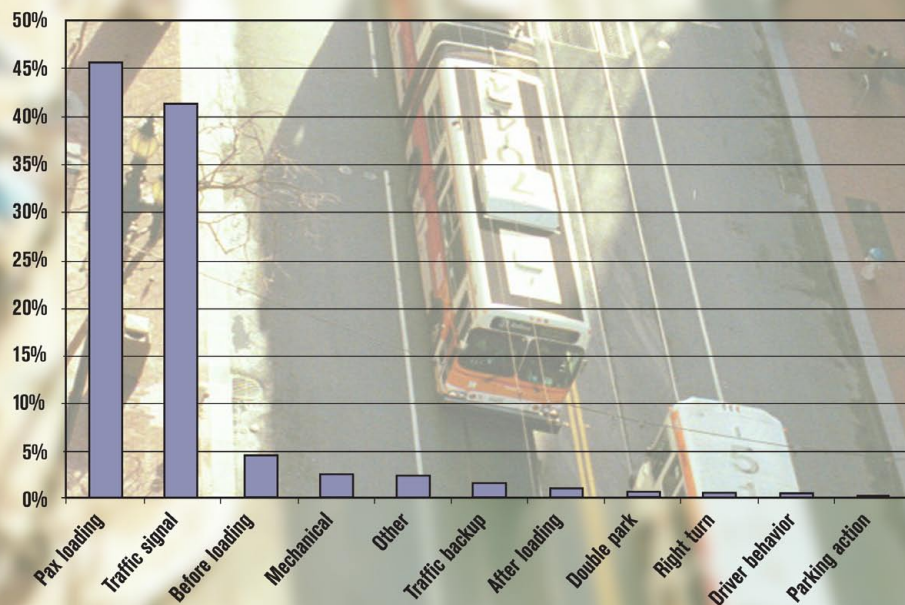


# MARKET STREET STUDY TECHNICAL REPORT



## TRANSIT TRAVEL TIME and DELAY

**Market Street  
Sources of Transit Delay**



This technical report is one of over a dozen reports prepared to support the Market Street Study. The purpose of the technical reports was to identify key issues and evaluate potential solutions. The technical reports were developed in consultation with the Market Street Study Technical Working Group, which consisted of representatives from the San Francisco Department of Parking and Traffic, Municipal Railway, Planning Department, and Redevelopment Agency.

Supplemental assessments may be required prior to the implementation of some specific recommendations contain in the Market Street Study Action Plan.





# Market Street Study

## Transit Travel Time and Delay Technical Report

### Purpose

Market Street forms the spine of San Francisco's network. However, due to the complexity of the street, transit is often delayed. This survey was an attempt to determine and quantify the causes of transit delay on Market Street. It also determined actual travel times and, by calculation, actual travel speeds.

### Methodology

Data collectors sat on the transit vehicle and noted each occurrence of transit delay, along with its location, its duration, and its proximate cause. In this survey, transit delay is considered any instance that the transit vehicle is stopped. Eleven causes of transit delay were considered, listed below.

- **Passenger Loading**--Time needed to load and unload passengers (not the same as the time the doors are open).
- **Traffic Signal**--Time spent at red lights, while not loading or unloading.
- **Before Loading**--Delay caused when vehicle cannot reach the boarding island on a red light because other vehicles are in the way.
- **Mechanical**--Delay from physical problems with the bus. De-wirements accounted for the vast majority of this delay.
- **Other**--All other sources of delay, e.g. emergency vehicles.
- **Traffic Backup**--Delay caused by traffic congestion when signal permits movement.
- **After Loading**--Delay that occurs once a bus has finished loading but before it proceeds, not due to signal.
- **Double Park**--Delay caused by passing or waiting for a double parked vehicle to move when passing is unsafe or impossible.
- **Right Turn**--Delay from either the transit vehicle, or vehicles immediately in front of the transit vehicle, waiting to turn right.
- **Driver Behavior**--Delay caused by transit driver that could not be attributed to any other category, with a clear path ahead.
- **Parking Action**--Delay attributable to a parking maneuver ahead of the bus.

### Survey Area

The survey area ran from Van Ness Avenue to Justin Herman Plaza. The surveys were conducted throughout February and March 2002, at all times of the business day.

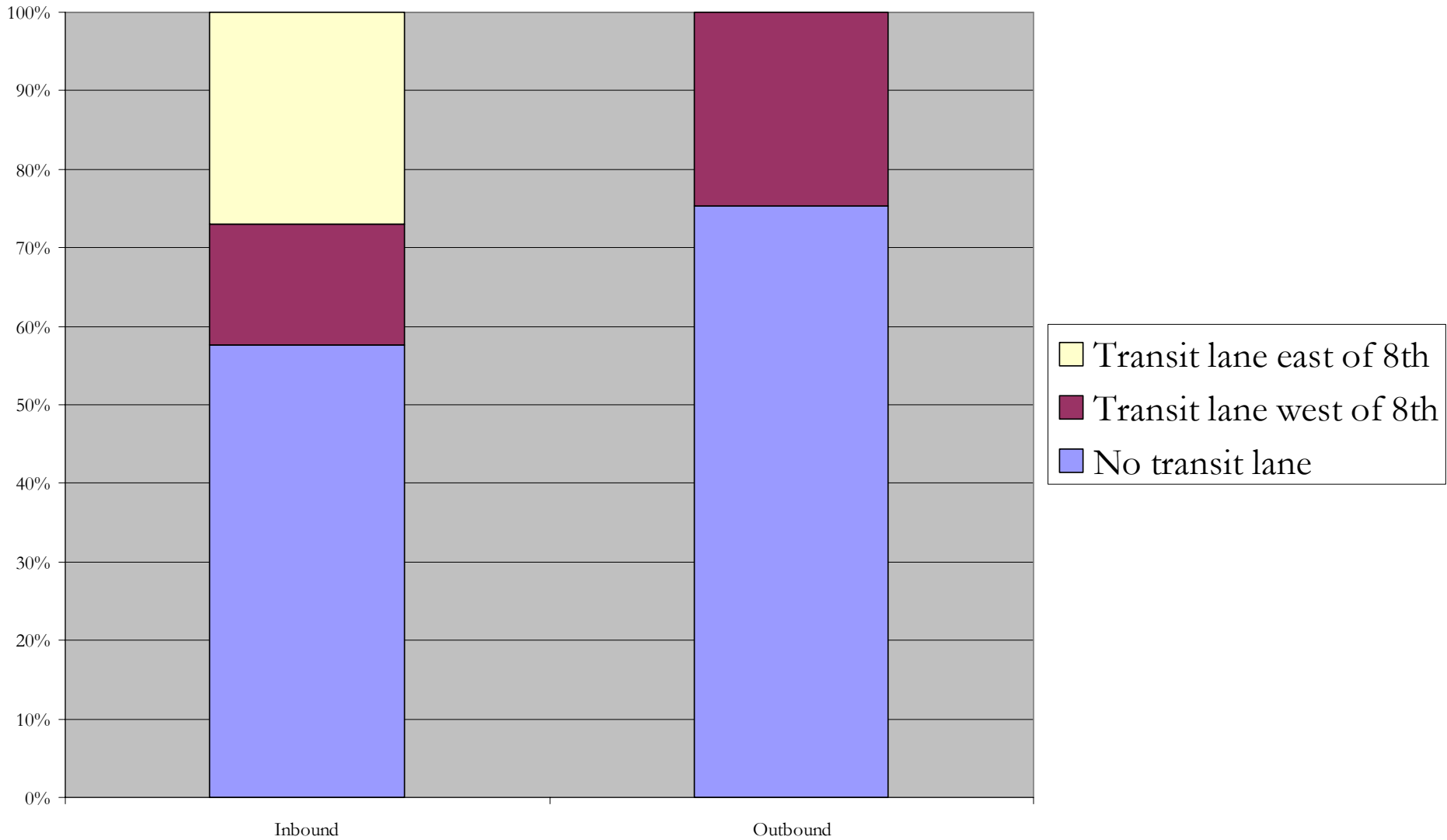
Multiple lines in each direction, both in the curbside lane and the center lane, were surveyed.

### **Data Collection Notes**

A survey of this type depends greatly on the judgment of the data collector. The number of individual data collectors was kept to a minimum to reduce the variability inherent in this.

The data are also dependent on the delay categories chosen. Different categories with different definitions could easily be established, yielding different results. However, the underlying patterns would remain the same.

# Transit Delay



# Sources of Transit Delay

