



Measure M2 Next 10 Delivery Plan:
Market Conditions Key Indicators
Analysis and Forecast

Orange County Transportation Infrastructure Construction Cost Pressure Index, Fall 2021

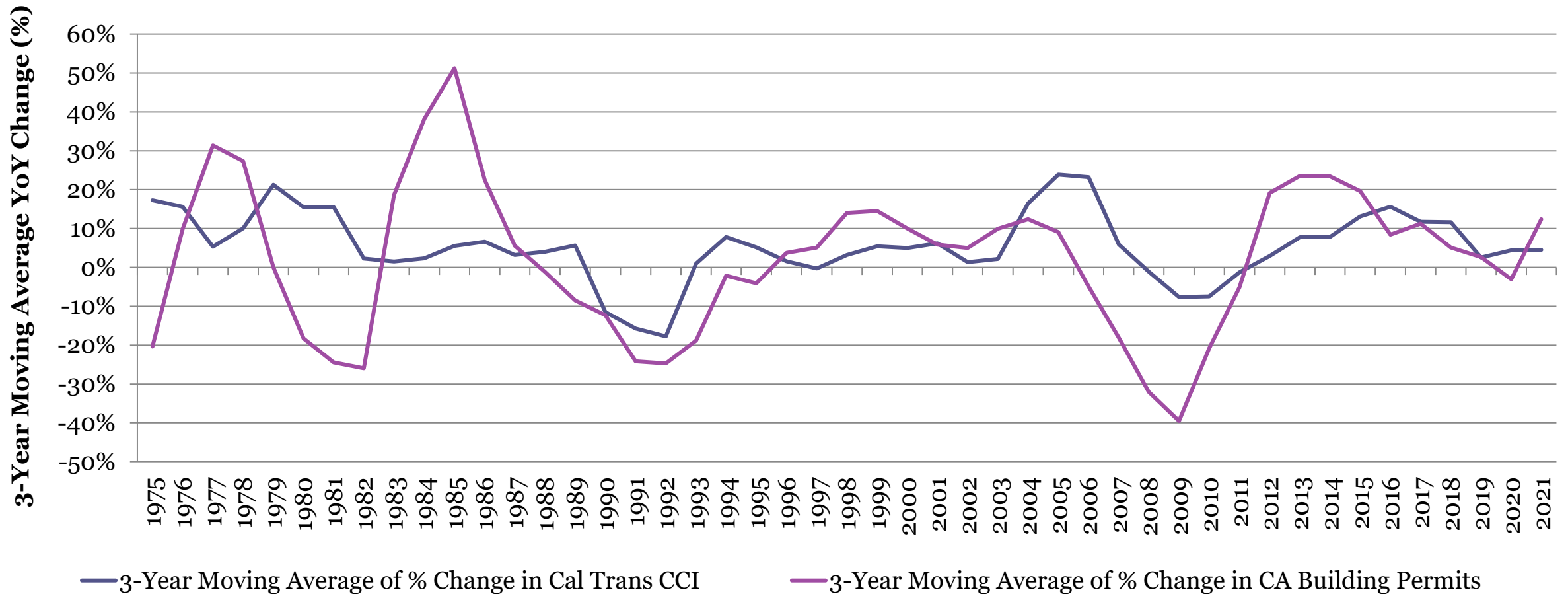
Orange County Business Council (OCBC)

September 2021

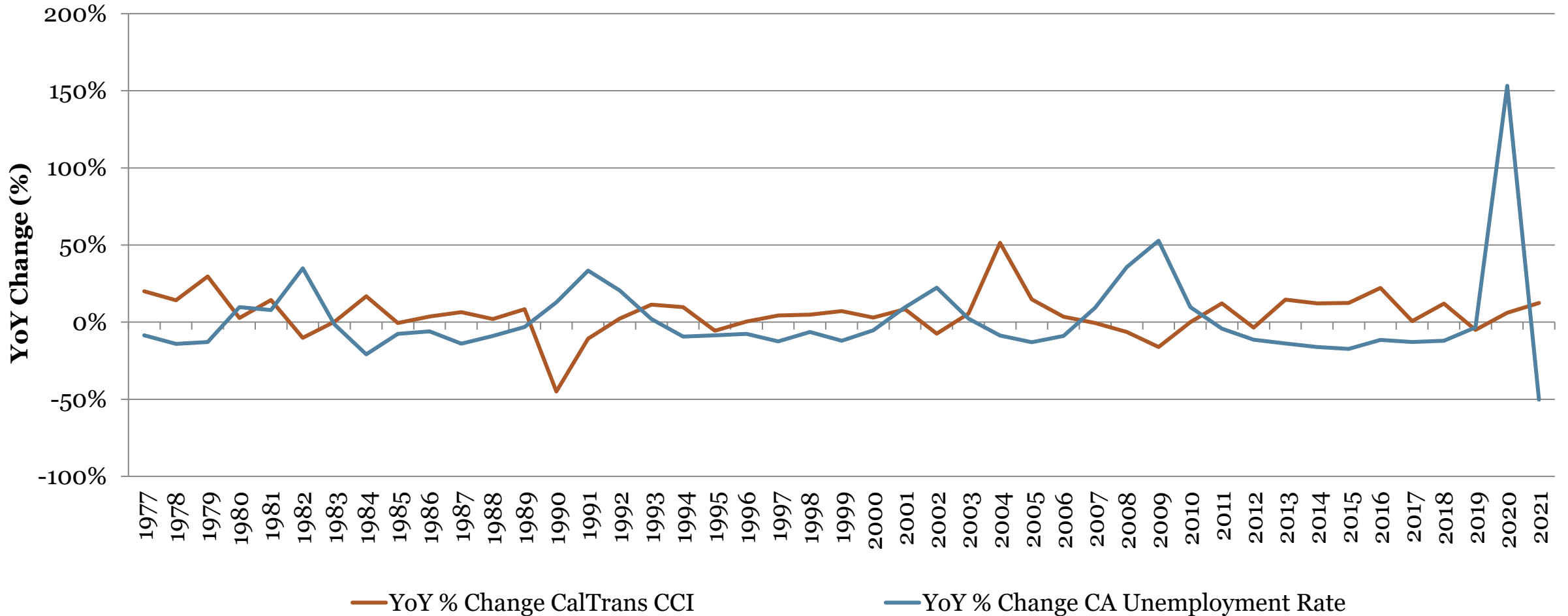
Orange County Transportation Infrastructure Construction Cost Pressure Index Model Components

- Economic Trends - State-level building permits and unemployment rate (Census and California Employment Development Department {EDD}).
- Material Costs - Construction aggregate, PCC pavement, PCC structural concrete, structural steel and bar steel (Caltrans).
- Labor Costs - Localized construction wages of NAICS defined sectors provided by Bureau of Labor Statistics (BLS).
- Economic Conditions - Tight economy in 2002-2005 and slack economy in 2007-2011.

3-Year Moving Average of Year-Over-Year Percent Change in Caltrans CCI and Building Permits



Year-Over-Year Percent Change in Caltrans CCI and CA Unemployment Rates



Forecast and Range of Orange County Transportation Infrastructure Cost Increases by Index Value

- 2021 - Forecasted Index Value: 5
- 2022 - Forecasted Index Value: 4
- 2023 - Forecasted Index Value: 4
- 2024 - Forecasted Index Value: 4

Range of Cost Fluctuations by Index Score			
Index	Low	Medium	High
0	-17%	-9.5%	-2%
1	-2%	-0.5%	1%
2	1%	1.5%	2%
3	2%	4%	6%
4	6%	8.5%	11%
5	11%	25.5%	40%

Impacts of the Pandemic Become Apparent

- Significant building permit issuance in Q1 2 2021 causes spike in estimate full-year building permits;
- California unemployment rates expected to continue to decline, sees slight jump in Q1 2021;
- Labor shortages push annual wages higher at the end of 2020; and
- Building materials (PCC structure and steel structure) see price jumps in 2021.

Year-over-Year Changes in California Building Permits, California Unemployment Rate and Orange County Construction Labor Costs, 2016-2021

Year	California Building Permits	% change year-on-year	California Unemployment Rate	% change year-on-year	OC Construction Labor Costs (avg. annual wage)	% change year-on-year
2016	102,350	4.2%	5.5%	-11.6%	\$67,179	3.8%
2017	114,780	12.1%	4.8%	-12.9%	\$71,474	6.4%
2018	113,502	-1.1%	4.2%	-12.0%	\$74,669	4.5%
2019	109,904	-3.2%	4.1%	-3.4%	\$77,289	3.5%
2020	104,554	-4.9%	10.3%	+153%	\$81,460	5.4%
2021*	151,850	45.2%	5.1%	-50.2%	\$81,656**	<1%

*2021 values projected from year-on-year changes in quarterly data, 2nd quarter 2020 to 2nd quarter 2021.

** 2021 values projected from year-on-year changes in quarterly data, 1st quarter 2020 to 1st quarter 2021.

Q1 – Quarter 1

OCBC Infrastructure Construction Cost Forecast

- Systematic Risks - currently experiencing large fluctuations due to COVID-19
 - Supply chain constraints
 - Direct measures of labor and materials cost continuing to fluctuate

OCBC OC Transportation Infrastructure Construction Cost Index Score, 2020-2024

Year	Index Score	Range of Cost Fluctuation
2021	5	11% to 40%
2022	4	6% to 11%
2023	4	6% to 11%
2024	4	6% to 11%

- Idiosyncratic Risks - not predictable and therefore not in model
 - Pent up demand may continue to drive costs higher
 - Shifting regulatory environment due to COVID-19
 - Future potential economic shutdowns related to COVID-19 spread/delta variant

Questions