April 8, 2020

SANDAG

COVID-19 IMPACT ON THE SAN DIEGO REGIONAL ECONOMY: Retail Sales and *TransNet* Revenue Forecasts

Summary

SANDAG is monitoring the COVID-19 pandemic and its potential impact on the San Diego economy and *TransNet* sales tax revenue.

As the current situation is quite fluid, rather than focusing on one possible scenario, the SANDAG Data Science and Analytics Department has developed a dynamic model to forecast 40 scenarios based on an array of assumptions. This model will continue to be refined as new data become available. This forecast provides the most informed estimates of potential impact from specific factors, such as the length of disruption and the severity of the COVID-19 impact on the economy.

The economic impacts presented in this report are based on the latest information available to SANDAG as of April 3, 2020. This report will be updated as new data become available.

At this time, there is no way to know when the current economic disruption will end. The timeline below shows the “known” dates, which will be refined in the coming weeks as Federal, State, and local agencies provide more guidance.

What’s New?

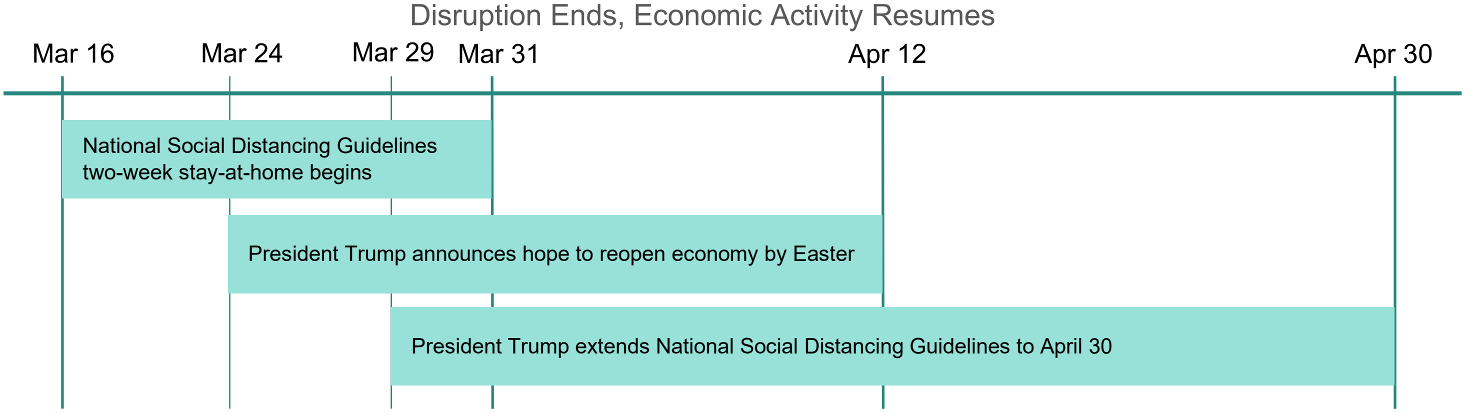
National
March 29 – President Trump extended national social distancing guidelines through April 30, 2020.

State of California
April 2 – Governor Newsom announced a payment plan that allows small businesses to defer payment of sales and use taxes of up to $50,000 for up to 12 months.

Regional
April 4 – The County of San Diego launched a campaign to encourage San Diegans to take an online pledge and commit to helping stop the spread of COVID-19.

Resumption of Economic Activity

Disruption Ends, Economic Activity Resumes



This report is researched, written, and updated by SANDAG through the Data Science and Analytics Department and Office of the Chief Economist
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Key Assumptions – As of April 3, 2020

SANDAG uses the most recent statements and information provided by Federal, State, and local authorities at the time of publication. In addition, the forecasts consider changes in legislation to support people and the economy, as well as business decisions, and behavioral changes in response to the pandemic.

- The latest federal guidelines are that social distancing should be practiced until **April 30**. This will result in a **two-month disruption.**
- Based on surveys of local businesses, taxable sales are anticipated to **decline in aggregate by 25% in March and approximately 50% in April.**
- A two-month disruption aligns with a **moderate V shape recession/recovery** (see below); this also is consistent with most independent national forecasts for 2020 and 2021. However, a longer recovery is equally likely.
- In the absence of specific details, the recent announcement by Governor Newsom that small businesses can defer payment of sales and use taxes of up to $50,000, for up to 12 months, is not considered.

Impact to Local Businesses

SANDAG is conducting ongoing surveys of local businesses to understand the impact of the COVID-19 disruption on sales, modified hours, and reduced staff, in addition to analysis of third-party information. Table 1 is a summary of findings and represents SANDAG's estimates as of April 3, 2020.

Table 1: Estimates of COVID-19 Impact on Sales by Sector

Industry	As of 4/3/20	Industry	As of 4/3/20
Retail		**Transportation**	
Apparel	-75%	Auto Parts/Repair	-50%
Department Stores	-50%	Auto Sales New	-75%
Furniture/Appliance	-50%	Auto Sales Used	-75%
Drug Stores	+20%	Service Stations	-65%
Recreation Products	-80%	Misc. Vehicle Sales	-80%
Florist/Nursery	-50%	**Construction**	
Misc. Retail*	+20%	Materials Wholesale	-50%
Food Products		Materials Retail	-30%
Food Markets	+30%	**Business to Business**	-50%
Restaurants	-75%	**Miscellaneous**	0%
Liquor Stores	+20%		

*Miscellaneous Retail includes online retailers, animal supply stores, and various telecommunications.

As new survey data and/or actual sales details are made available by the State of California, these figures will be updated. Initial estimates indicate a 47% decrease in retail sales expected in April 2020.

San Diego Region Taxable Retail Sales Forecast – As of April 3, 2020

As a point of reference, in FY 2019, the San Diego region recorded taxable retail sales of $59.6 billion. Table 2 presents the pre-COVID-19 disruption taxable sales forecasts in both fiscal (July to June) and calendar years.

Table 2: Pre-COVID-19 Taxable Retail Sales Forecast

Fiscal years	Taxable sales ($billion)	% change	Calendar years	Taxable sales ($billion)	% change
FY 2019	59.6	2.2%	CY 2019	60.8	3.0%
FY 2020	62.3	4.5%	CY 2020	63.1	3.8%
FY 2021	64.2	3.0%	CY 2021	65.0	3.0%
FY 2022	66.3	3.3%	CY 2022	67.2	3.4%

Table 3 shows the impact of the COVID-19 economic disruption on taxable retail sales in the San Diego region from March 2020 to the date when taxable sales return to the initial forecast path (the baseline). Five possible disruption durations are presented, ranging from two to six months. These retail sales forecast scenarios are based on the assumptions outlined on page 7 of this document and include the length, depth (severity), and recovery from the disruption. Probabilities are assigned to each scenario based on the most reliable empirical data (information that is known now as fact, and not speculation or supposition). Scenarios with grayed-out text are not considered probable at this time.

Table 3: Potential Total Loss of Taxable Retail Sales in the San Diego Region 2020 through 2030 due to COVID-19

Scenario (Recession) Type and Recovery	Back to Baseline	Scenario	Length of Disruption				
			2 mo.	3 mo.	4 mo.	5 mo.	6 mo.
Disruption from March 15, 2020 to:			**May 15**	**June 15**	**July 15**	**Aug 15**	**Sept 15**
COVID-19 only (V)	July 2020	A	-$5.5B	-$8.2B	-$11.0B	-$13.4B	-$16.1B
Mild (V)	July 2020	B	**-$7.8B**	-$10.4B	-$13.1B	-$15.4B	-$18.0B
Moderate (V)	July 2021	C	**-$10.1B**	**-$12.6B**	**-$15.2B**	-$17.4B	-$19.9B
Moderate(V-Long)	July 2022	D	**-$13.4B**	**-$15.9B**	**-$18.5B**	-$20.8B	-$23.3B
Moderate (U)	July 2026	E	**-$34.1B**	**-$36.6B**	**-$39.2B**	-$41.4B	-$43.9B
Severe (V)	July 2021	F	-$15.5B	**-$17.8B**	**-$20.2B**	**-$22.2B**	-$24.4B
Severe (U)	July 2025	G	-$37.4B	**-$39.7B**	**-$42.0B**	**-$44.0B**	**-$46.3B**
Severe (Great Recession [U-Long])	July 2030	H	-$104.4B	-$106.7B	-$109.1B	**-$111.1B**	**-$113.3B**

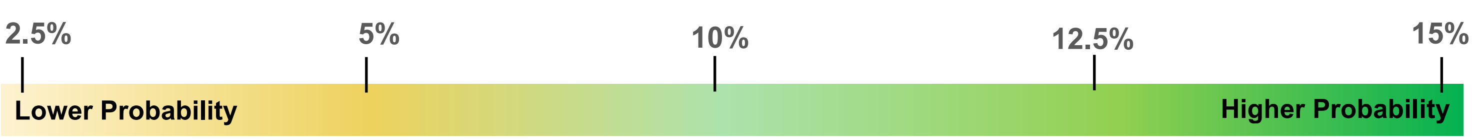


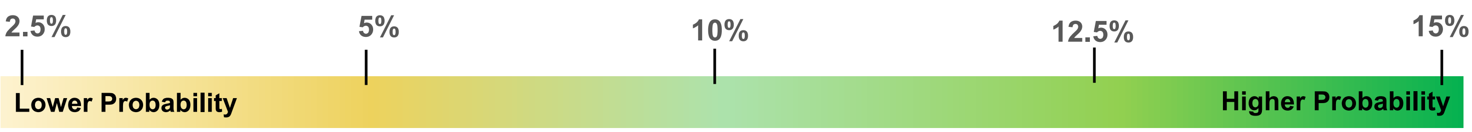
Table 4 shows the specific impact on calendar years 2020 and 2021 for each scenario and considers two- and three-month disruptions.

For each scenario/length of disruption pairs, the first line shows the loss in taxable sales compared to the pre-COVID-19 forecast. The second line shows loss as a percentage of the pre-COVID-19 forecast. For instance, in the case of scenario C and a two-month disruption, taxable sales would be $7.2 billion (11.4%) lower than expected in 2020 and $3 billion lower (or 4.5%) in 2021.

The scenarios in green are regarded as more likely to occur, followed by those in yellow. Scenarios in black text are considered possibilities if the disruption continues into the summer; however, currently no empirical data suggests that the stay-at-home order would persist for five or more months. Scenarios with grayed-out text are not considered probable at this time.

Table 4: Potential Loss of Taxable Retail Sales in the San Diego Region in the Short Term (2020 and 2021) due to COVID-19

Scenario (Recession) Type and Recovery	Back to Baseline	Scenario	Length of Disruption			
			2 months		3 months	
Disruption from March 15, 2020 through:			May 15		June 15	
Pre-COVID-19 Forecast			2020 $63.1B	2021 $65.0B	2020 $63.1B	2021 $65.0B
COVID only (V)	July 2020	A	-$5.5B -8.7%	$0.0B 0.0%	-$8.2B -12.9%	$0.0B 0.0%
Mild (V)	July 2020	B	-$6.0B -9.5%	-$1.8B -2.8%	-$7.3B -11.6%	-$3.1B -4.7%
Moderate (V)	July 2021	C	-$7.2B -11.4%	-$3.0B -4.5%	-$8.4B -13.3%	-$4.2B -6.5%
Moderate (V-Long)	July 2022	D	-$7.2B -11.4%	-$4.6B -7.1%	-$8.4B -13.3%	-$5.8B -9.0%
Moderate (U)	July 2026	E	-$7.2B -11.4%	-$6.6B -10.1%	-$8.4B -13.3%	-$7.8B -12.1%
Severe (V)	July 2021	F	-$9.9B -15.6%	-$5.7B -8.7%	-$11.0B -17.4%	-$6.8B -10.4%
Severe (U)	July 2025	G	-$9.9B -15.6%	-$10.3B -15.8%	-$11.0B -17.4%	-$11.4B -17.6%

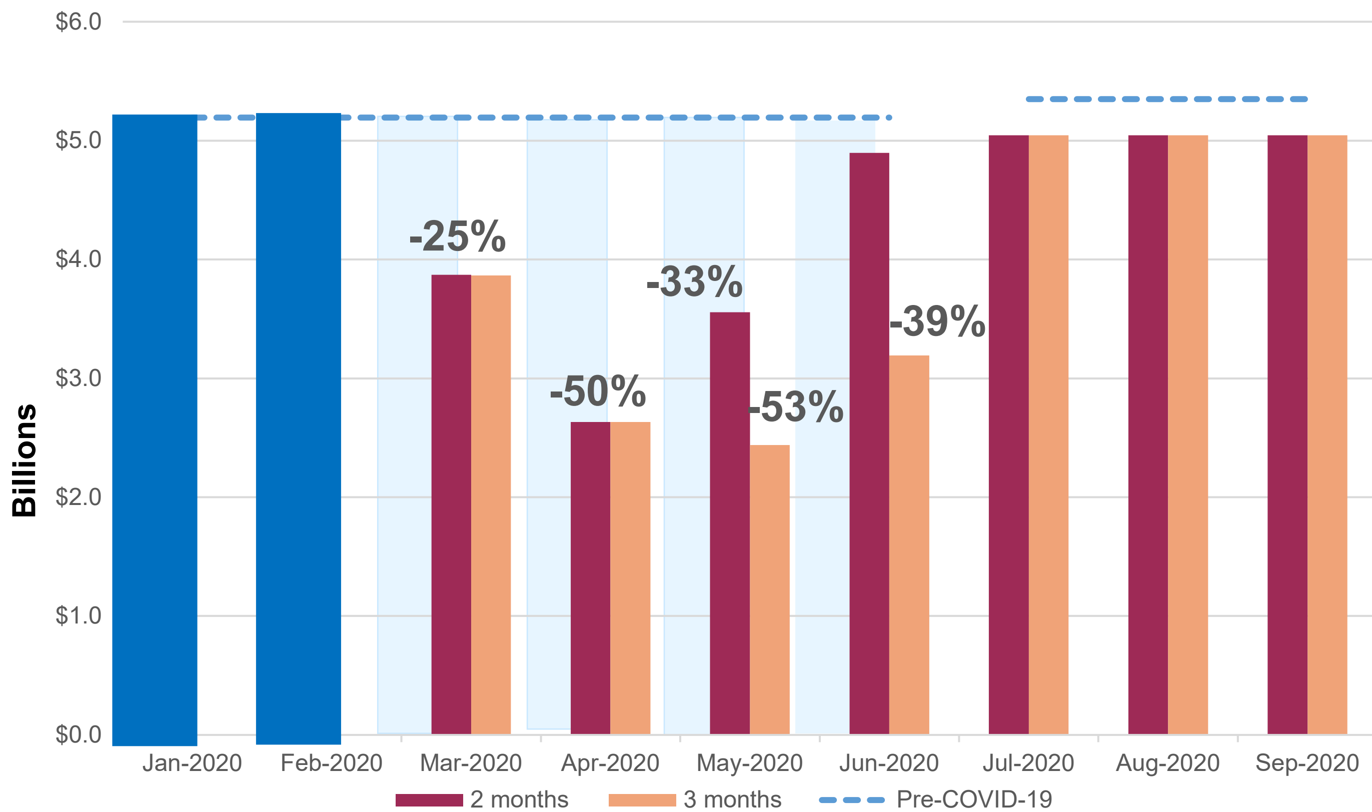


COVID-19 impact on 2020 and 2021 San Diego Region Taxable Retail Sales – As of April 3, 2020

Figure 1 shows the impact of COVID-19 disruptions on taxable sales in the coming months:

- The dark blue bars represent average collections for the months of January and February 2020.
- The light blue bars represent pre-COVID-19 anticipated retail sales.
- The red bars show the monthly impact of a two-month disruption to taxable retail sales.
- The orange bars show the monthly impact of a three-month disruption taxable retail sales.

Figure 1: Potential Loss of Taxable Retail Sales in the San Diego Region (March to July) if COVID-19 Disruptions Last Two or Three Months



TransNet Revenue Forecast – As of April 3, 2020

Table 5 shows 40 *TransNet* revenue forecast scenarios SANDAG produced based on assumptions outlined on page 7 of this document. SANDAG forecasts include the length, depth (severity), and recovery from the disruption. Probabilities are assigned to each scenario based on the most reliable empirical data (information that is known now as fact, and not speculation or supposition).

The scenarios in green are regarded as more likely to occur, followed by those in yellow. Scenarios in black text are considered possibilities if the disruption continues into the summer; however, currently no empirical data suggests that the stay-at-home order, would persist for five or more months. Scenarios with grayed out text are not considered probable at this time.

Table 5: Potential Loss of *TransNet* Sales Tax Revenue due to COVID-19

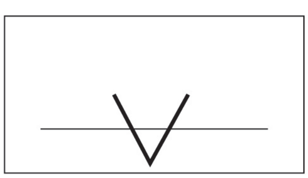
Scenario (Recession) Type and Recovery	Back to Baseline	Scenario	Length of Disruption				
			2 mo.	3 mo.	4 mo.	5 mo.	6 mo.
Disruption from March 15, 2020 to:			**May 15**	**June 15**	**July 15**	**Aug 15**	**Sept 15**
COVID only (V)	July 2020	A	-$28.0M	-$41.8M	-$56.3M	-$68.5M	-$82.3M
Mild (V)	July 2020	B	**-$40.0M**	-$53.2M	-$67.1M	-$78.9M	-$92.2M
Moderate (V)	July 2021	C	**-$51.9M**	**-$64.6M**	**-$78.0M**	-$89.3M	-$102.1M
Moderate (V-Long)	July 2022	D	**-$68.8M**	**-$81.6M**	**-$95.0M**	-$106.3M	$119.1M
Moderate (U)	July 2026	E	**- $174.4M**	**-$187.2M**	**-$200.6M**	-$211.9M	-$224.7M
Severe (V)	July 2021	F	-$79.6M	**-$91.2M**	**-$103.3M**	**-$113.6M**	-$125.2M
Severe (U)	July 2025	G	-$191.5M	**-$203.0M**	**-$215.2M**	**-$225.5M**	**-$237.0M**
Severe (Great Recession [U-Long])	July 2030	H	-$534.8M	-$546.3M	-$558.5	**-$568.7M**	**-$580.3M**

2.5% **5%** **10%** **12.5%** **15%**

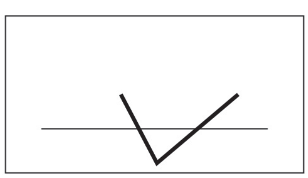
Lower Probability **Higher Probability**

The letters following each scenario refer to the shape of the forecasted recession. "V" shaped forecasts recover more quickly to the baseline where as "U" shaped forecasts represent longer recessions with slower economic recovery.

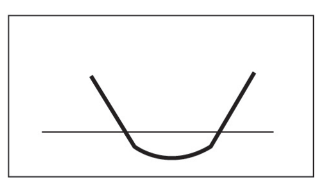
Moderate V



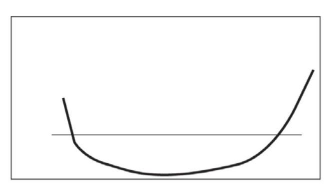
Moderate V-Long



Moderate U



Severe U-Long



Factors Influencing Forecast Assumptions

Length of Disruption

The first variable influencing the forecast is the length of time for the disruption caused by the COVID-19 pandemic and subsequent shutdown of major parts of the economy. Stay-at-home orders have been imposed and extended, and it is likely the orders may change again as government agencies collect more data on the spread of the virus. Since there is no reliable way to predict the length of the economic slowdown SANDAG has prepared a series of forecasts for economic disruptions ranging from two to six months. SANDAG used March 15, 2020 as the start of the disruption, with corresponding disruption end dates between May 15 and September 15, 2020. New scenarios will be added as more information becomes available.

Depth of Disruption

The second variable influencing the forecast is the depth of the disruption. A mild disruption may, for a short time, impact some discretionary spending, such as spending on gasoline, dry cleaning, or restaurants. A more severe disruption would include cuts in expenditures on durable goods, such as automobiles and appliances; forgone purchases of significant amounts of fuel; behavioral shifts in restaurant spending or leisure activities; reduction in travel expenditures; cancellation of vacations; and more.

For forecasting purposes, SANDAG models three scenarios: mild, moderate, and severe recessions:

- The mild scenario assumes no economic recession, only a reduction in spending during the disruption.
- The moderate scenario assumes a recession that models the 1990-1991 recession and recovery.
- The severe scenario assumes reductions in economic activity that mimic the 2008 Great Recession.

Recovery Shape

Each economic recession has a unique recovery path. Economists use letters to represent the shape of the recovery. During the COVID-19 pandemic, experts have mentioned several shapes for the recovery including "V," "W," "U," and "L." SANDAG currently models the following recovery shapes related to this pandemic:

"V" Shape: V-shapes are the normal shape for a recession. The economy suffers a sharp but brief period of economic decline with a clearly defined trough, followed by a strong recovery returning to previous economic levels preceding the recession. The SANDAG "V" shape forecast assumes recovery occurs by July 2021.

"V-Long": SANDAG forecasts a variation on the "V" shape recession that has the same characteristics, but the recovery is slower, with the economy recovering by July 2022.

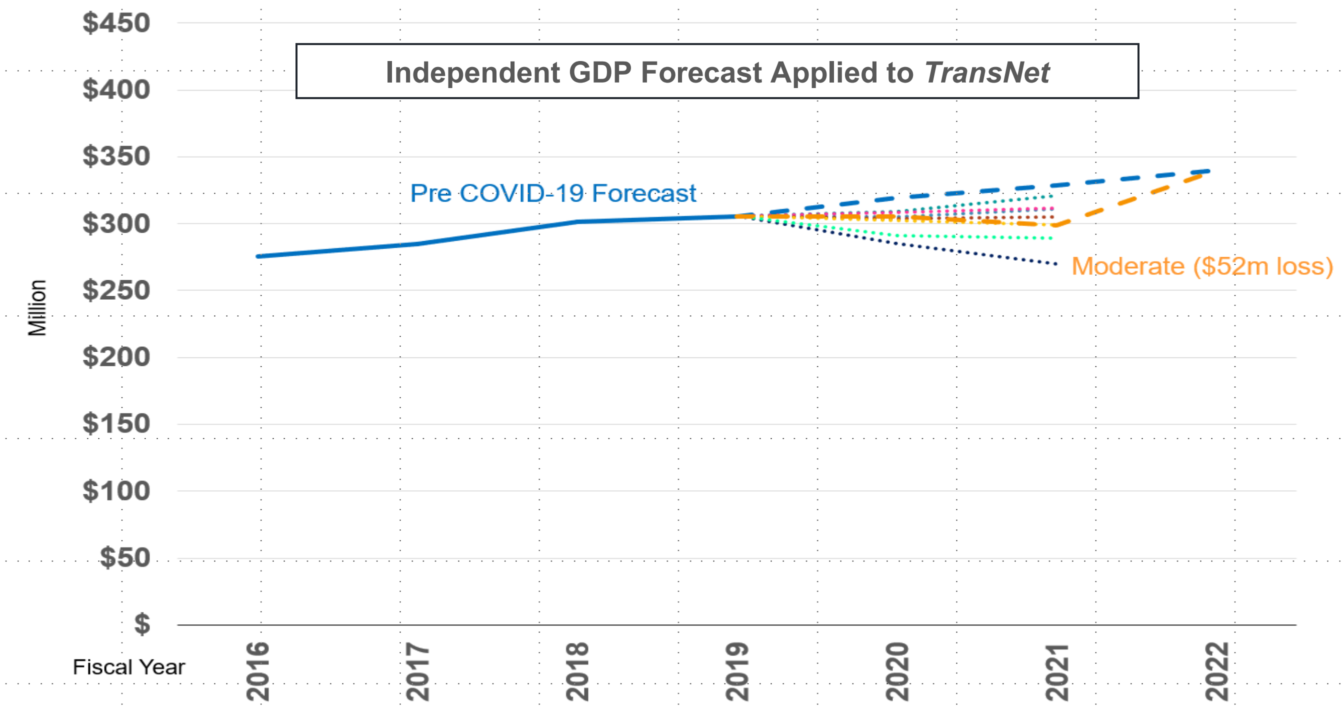
"U" Shape: U-shaped recession is longer than a V-shaped recession and has a less-clearly defined trough. Gross Domestic Product (GDP) may shrink for several quarters and only slowly return to trend growth. If structural changes occur while social distancing impacts businesses, or significant and prolonged job losses persist, a U-shaped recovery is more likely. The economy may stay depressed for some time before finding a "new normal" and beginning its recovery. SANDAG forecasts recovery in this scenario to take a matter of years, not months, with recovery occurring mid-2026.

"U-Long": The U-long scenario assumes a recovery modeling the 2008 Great Recession. This model translates to a 10-year recovery with the economy recovering in 2030.

The **"W"** or "double-dip recession" and **"L,"** where the economy never recovers to previous levels, are specific cases and, for the purposes of this analysis, are not currently used.

Independent National Forecasts

Each week, SANDAG reviews and compares national forecasts to our local economic forecast. The national forecast typically estimates the impact of the COVID-19 economic disruption on the U.S. GDP. SANDAG built models to translate or extrapolate the impact of changes in the U.S. GDP on local retail sales and sales tax revenue.



As of April 3, most national forecasters were expecting a “V” shape recession/recovery. However, recent indications are that forecasts will be downgraded from mild to moderate or severe in the coming weeks. As of April 3, SANDAG is using a moderate recession forecast for planning purposes. *This is subject to change as new information is available.*

Table 6: Independent GDP Forecast Applied to *TransNet* Revenues - Potential Loss of Sales Tax Revenue in FY 2021

Line	Independent GDP Forecast	Date (2020)	Loss by Percentage in FY 2021	Loss by Dollar Amount in FY 2021
	Pre COVID-19 Forecast	-	-	-
	Oxford Economics	March 20	-2%	-$7.6M
	IHS	March 20	-5%	-$17.7M
	UCLA	March 12	-5%	-$17.7M
	Moodys	March 27	-7%	-$23.7M
	Wells Fargo	March 27	-9%	-$30.0M
	SANDAG	**March 27**	**-9.2%**	**-$30.2M**
	Goldman Sachs	March 31	-12%	-$39.5M
	Deloitte	March 27	-18%	-$59.0M