

EXECUTIVE SUMMARY

Hobbs, Ong & Associates (“HOA”) was retained by the Southern Nevada Water Authority (“SNWA”) to review and analyze the economic impacts of a growth interruption in Southern Nevada. This executive summary provides an outline of our findings, an overview of the project and an introduction to the analysis undertaken. Beyond our base analytical team, other individuals and groups assisted in the preparation of this report. Included are our Ph.D. economist review panel and many others who provided meaningful information and insights.¹

Generally speaking, this project was intended to be a substantive update of *The Impact of a Water Imposed Interruption of Growth in the Las Vegas Region* report prepared by Dr. William T. White et. al. for the Las Vegas Valley Water District in 1992 (“the White Report”). In that analysis, the authors concluded *that should Clark County suffer a sudden and severe interruption to its normal growth patterns, there would be strong and undesired economic, fiscal and social effects*. We have applied updated economic models to updated assumptions and reviewed the recent literature in the area. Having done so, our conclusions are materially unchanged from those presented in the White Report nearly 12 years ago. If anything, it would appear that Southern Nevada is more dependent upon growth economies today than it was in 1992; and, significantly, Nevada is more dependent upon Clark County today than it was in 1992. These assertions being held as accurate, we would argue that a growth interruption on the order of that analyzed by Dr. White and his colleagues would have a more severe and more far-reaching impact than the same interruption analyzed a decade ago.

Importantly, where Dr. White’s analysis focused on the specific impacts of a “water-imposed growth moratorium,” we were asked to

¹ Included on our economist review panel were: Dr. Robert Burchell, Distinguished Professor at the Rutgers University Center for Urban Policy Research; Dr. W. Michael Hanemann, Chancellor’s Professor in the Department of Agricultural and Resource Economics at the University of California, Berkeley; Dr. Thomas Harris, director of the University of Nevada, Reno Center for Economic Development; Dr. Stephen M. Miller, chair of the University of Nevada, Las Vegas Department of Economics; Dr. Keith Schwer, head of the University of Nevada, Las Vegas Center for Business and Economic Research; and Dr. Marshall Vest, director of Economic and Business Research at the Eller College of Business and Public Administration at the University of Arizona.

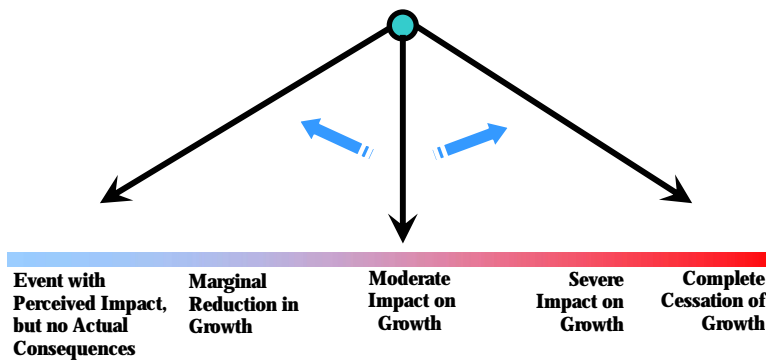
take a broader look at the economic and fiscal consequences of an interruption in growth absent a particular source or magnitude. This report concentrates on the identification of impacts resulting from an interruption, despite its underlying pathology. Throughout this executive summary, we highlight scenarios closely resembling those assumed in the White Report but focus more heavily on a general impact range.

To test the impacts of an interruption in growth, certain possible conditions were modeled. Essentially, the model needed to assess the following:

- The duration of an interruption;
- The severity of the interruption;
- The length of time it would take for recovery to occur; and
- The degree to which recovery would occur.

In the analysis, we examined illustrative examples of levels of severity and degrees of recovery; both over similar timeframes. It was

**ILLUSTRATION OF GROWTH INTERRUPTION
RANGE OF POTENTIAL IMPACTS**



assumed that the interruption would have a three-year duration (e.g., year 1 through 3), and that the severity of the interruption would impact construction employment by 10, 30 and 65 percent. That is, under the first scenario, a 10 percent reduction in direct construction employment would occur; under the second scenario, a 30 percent reduction would occur; and, under the third scenario, a 65 percent reduction would occur. These levels were chosen to illustrate a conservative, moderate and severe level of impact on direct construction employment, and, in turn, the economy as a whole. It was further

assumed that it would take three years for the hypothetical level of impact to be fully realized, with 25 percent of the impact felt in year one, 75 percent in year two, and 100 percent in year three.

Three recovery alternatives were also considered. For modeling purposes, we assumed any recovery would occur during the 10 years following the initial interruption (e.g., years 4 through 14). Recovery scenarios included a “rapid recovery” scenario, a “moderate recovery” scenario and a scenario in which the economy fails to recover altogether. The rapid recovery scenario operates under the assumption that the economy is able to fully rebound, returning to baseline performance levels 10 years after the initial impacts are

realized. The moderate recovery scenario assumes the economy returns to baseline growth rates 10 years post-interruption, but never “makes up” for lost growth. The final recovery scenario assumes that the economy enters a period of stagnation or a sustained period of decline.

MODELED IMPACT SCENARIOS

	Initial Impact <i>(period: years 1-3)</i>	Recovery <i>(period: years 4-14)</i>
Scenario 1	10% initial impact	Rapid recovery
Scenario 2	10% initial impact	Moderate recovery
Scenario 3	10% initial impact	No recovery
Scenario 4	30% initial impact	Rapid recovery
Scenario 5	30% initial impact	Moderate recovery
Scenario 6	30% initial impact	No recovery
Scenario 7	65% initial impact	Rapid recovery
Scenario 8	65% initial impact	Moderate recovery
Scenario 9	65% initial impact	No recovery

These “initial impact” and “recovery” scenarios are intended to demonstrate a broad range of potential fiscal and economic outcomes. Importantly, each reflects a hypothetical set of assumed circumstances. One could effectively argue that a rapid recovery is simply too optimistic, given the region’s dependence on growth, lack of industrial diversity and transferable skills in the labor force. Conversely, a viable argument could be presented that any scenario assuming a failure to recover is simply too pessimistic because, in the long

run, economies tend to reestablish some degree of balance. Both would be right; and as such, we focus on intermediate scenarios and present our findings as order of magnitude estimates. While not an exact replication of the work performed by Dr. White and his colleagues, the 65 percent initial impact scenario with a moderate recovery (Scenario 8 in the table above) offers the closest comparison to the trend assumptions made in their report. From time to time, when we make comparisons to the White Report, it is this scenario which is referenced.

FINDINGS IN SUMMARY

The tables and charts provided at the end of this summary, reflect a broad spectrum of potential outcomes. They are far-reaching and, in most cases, unparalleled in Nevada’s modern history. The losses in employment, output, income, population and tax collections are devastating to be sure; however, the exhibits provided do little to reflect the ramifications of these outcomes on the individual Nevadan, the small business owner, the college graduate or the senior citizen in need of care long-term. The suggestion that certain segments of the population, certain sectors of our economy or certain political subdivisions would be unaffected is to turn a blind eye to reality.

Highlights:

Southern Nevada is unique. Southern Nevada has been the fastest-growing region in the United States during the past 20 years. As a result, a significantly higher-than-average share of our employment, income, gross state product and tax payments are directly linked to growth-related sectors of the economy.

Growth rates will decline as the economy matures. Over time, growth will slow naturally as the economy matures. However, artificially interrupting this process will cause economic, fiscal and social consequences.

Rates of growth do not necessarily equate to quality of life. There are benefits and drawbacks associated with fast-growing and slow-growing regions. In many respects, it is not a question of whether or at what rate a community grows, but how that growth is occurring.

It's the fall that's going to kill you. Sudden and severe shifts in normal growth patterns are closely associated with broad, negative impacts on communities.

Few, if any, escape the impact. A significant interruption to normal growth patterns, would affect large and small businesses in every industry. Children, families and senior citizens are likely to be impacted by government's reduced capacity to provide public services combined with increasing demands tied to rising rates of unemployment, crime, poverty and indigent care needs.

As goes Clark County, so goes the State of Nevada. A significant economic interruption in Clark County would reduce revenues at state and local levels, affecting fiscal balances in southern, northern and rural counties. Funding sources for traditionally protected programs, such as education and health care, would be significantly reduced. This could have particularly severe consequences for rural counties that are already under fiscal pressure.

The potential for a race to the bottom. Any recovery would be dependent on the continued presence of the interrupting force and the effectiveness of policy responses. Importantly, suppressing growth is infinitely easier than stimulating it; an artificial interruption to normal growth patterns could result in race to the bottom, as decline begets decline.

The greater the interruption the greater the impact. More intense interruptions are associated with more far-reaching economic, fiscal and social consequences. This having been said, even comparatively mild, yet unrelenting, interruptions would have major costs to the region and the state over the long run.

The growth interruption scenario most similar to conditions underlying the White Report (e.g., a 65 percent initial impact followed by a moderate recovery) resulted in the conclusions provided below. As noted above, this is merely one scenario that is offered as a point of reference. The broader range of impacts is provided in the tables at the end of this summary. All dollar amounts are expressed in constant 2000 dollars, unless otherwise stated.

Construction-related sectors would be the first and hardest hit, losing 97,800 person years² of employment during the first three years post-interruption. This represents a reduction of 43.1 percent when compared to non-interruption conditions.

Economic impacts are not limited to construction and growth-related industries. Total employment losses account for 170,000 person years of employment during the first three impact years, mounting to more than 1.3 million person years lost during the 14-year impact study period.

Fewer jobs results in fewer wage and salary payments and less overall consumption. On average, \$3.8 billion per year is lost in labor income. This represents an 11.5 percent decline when compared to baseline conditions.

Total economic output, the value of all goods and services produced, is reduced 12.3 percent or by \$148 billion over the 14-year impact study period. Significant losses are realized in wholesale trade, retail trade and services, as fewer consumers demand fewer goods and services from Nevada businesses.

Population declines 278,000 person years versus baseline conditions in the initial impact period (years 1-3), in-migration is significantly reduced and the families of displaced workers relocate out of Nevada. In total, the population is reduced by more than 11.3 percent by the close of the study period.

² A person year of employment is defined as one job for one year. Thus, one job lost for a three-year period would equate to three lost person years of employment. Additional discussion is provided later in this report.

Total tax payments are reduced by \$15.1 billion, with state and local government losing roughly \$2.9 billion in collections during the 14-year study period. Traditionally “protected” programs such as education and long-term care could require significant cuts.

Rising unemployment would lead to lower incomes, higher crime rates and an increased incidence of poverty. Demands placed on state and local governments would increase dramatically, with fewer tax dollars available to supply them. Significant caseload increases in welfare and health programs would be expected.

Following is a summary of the general conclusions drawn from the analysis of the impact of an interruption in growth:

Nevada is heavily dependent upon growth as an industry, much the same as it is dependent upon other industries from an economic and fiscal perspective. Nevada is also a unique economy - due to both its opportunities and its limitations - that makes it difficult to compare to any other state economies. The fact that Nevada’s population grew by 61 percent between 1992 and 2002, nearly five times than the national average and more than 20 percentage points higher than the second fastest growing state (Arizona), is a reality that cannot be ignored.

Growth, through policy initiatives, can be artificially limited or halted. However, it cannot be as easily stimulated/created. Artificially altering Nevada’s dependency upon growth would not occur without significant economic, fiscal and social consequences. Population and employment growth in Nevada has been extraordinary over the past three decades, yet is expected to slow over the next, and coming, decades. If this occurs as projected, the dependence upon growth as an economic sector will naturally lessen over time. In fact, assuming no interruption in growth, construction-related employment is assumed to decline from more than 9 percent of Clark County employment in 2003, to 7 percent in 2013 and 6 percent in 2023. While the overall economy is projected to add nearly 200,000 new jobs over the next 20 years, construction-industry positions are expected to decrease by nearly 10,000 positions.

It is less a question as to whether a slowdown in population growth, et al, will occur than when it will occur. While there is widespread agreement among economists that rates of growth will slow and move toward national norms, we have yet to reach the predicted “elbow in the curve.” Nonetheless, it continues to

be accepted that future rates of growth will lessen as we move toward maturity.

As Nevada enters a phase of reduced growth rates, the economy will naturally shift into a new economic equilibrium. However, a swift or artificial interruption in this pattern will not allow the same natural maturation to occur.

Nevada is viewed in some ways as a state that already has a form of growth control in place (i.e., Bureau of Land Management disposal boundaries). As such, the community benefits in some ways (i.e., less overall sprawl) and suffers in others (i.e., increasing costs of housing associated with decreased land availability).

The state and local government entities spend a dominant amount of their general fund dollars in support of education, public safety and other essential programs. These programs are dependent upon public revenues that would be impacted by an interruption in growth in Southern Nevada. Thus, beyond the fiscal and economic consequences noted above, there is a clear potential for significant social impacts that would affect those both within and outside the construction industry. These would likely include the following:

- Increased demand for public assistance programs associated with increased unemployment;

- Increased crime rates as an outfall of increased unemployment;

- Increased expenditures in support of public safety and criminal justice programs;

- Increased densification (e.g., smaller houses on smaller lots) and reduced rates of homeownership, as disposable income lessens the amount of money families can afford to spend on housing declines; and

- Increased costs associated with aging infrastructure and less capital improvement costs (i.e., roads, police and fire stations, and flood control facilities) absorbed by private developers.

Anecdotal and case study research suggest that there are both benefits and drawbacks to being fast-growing and slow-growing communities. However, swift or severe changes to the patterns of growth are closely associated with significant economic and fiscal consequences and challenges.

The construction industry, which most directly reflects the “growth industry,” is a significant component of the economy of

Southern Nevada and the state as a whole. The industry directly employs 9 percent of the state's workforce (77,700 jobs), pays 11 percent of all wages and salaries (\$3.8 billion) and accounts for 13 percent of state output (\$11.6 billions). Including indirect and induced impacts, it accounts for roughly 17 percent of the employment base (157,400 positions), 19 percent of the wage base and 20 percent of Clark County's total output is linked, directly or indirectly, to growth industries.

The construction industry is tied to other economic sectors within the overall economy, providing for material "ripple effects" throughout other sectors if construction activity is impacted.

Impacts within the construction sector reverberate throughout the balance of the economy. For example, for every \$1.00 in labor income lost within the construction sector, a total of \$1.71 is throughout in the Nevada economy. For every \$1.00 in construction activity, \$1.59 is created within the overall economy.

For every 10 construction-related jobs created in the economy, approximately 10 jobs are created in other sectors. The inverse is also true. Additionally, lost population growth results in less demands for goods and services -- from popsicles to pediatricians. While construction sectors are the most severely impacted in the early years of our analysis, trade and services sectors are the hardest hit in the long run.

The construction industry is a significant contributor to the fiscal system of the State and its local government entities, providing as much as \$244 million in combined State and local government revenue in fiscal year 2002 and \$486 million in additional public infrastructure improvements. Downward cycles in the construction industry, whether for natural or artificial reasons, will result in less revenue to support public programs and projects.

PROJECT OVERVIEW

For the past three decades, Nevada has been characterized by unprecedented levels of population, economic and fiscal growth. A vast majority of this growth has occurred in Southern Nevada, resulting in the Las Vegas area consistently being among the fastest growing metropolitan statistical areas ("MSA's") in the country. There is little question that the growth that has occurred has created

both opportunities and challenges for the Las Vegas MSA, as well as the State as a whole.

Despite beliefs about the positive or negative characteristics of growth, it is undeniable that growth has been a part of the reality of Nevada for many decades. In other words, growth has been as real a part of Nevada's socioeconomic make-up as have gaming, tourism, mining and other industries that make Nevada what it is today. As a result, growth is as important to fully understand as any of the aforementioned parts of our economic landscape. To help focus more directly upon growth-related impacts, the Las Vegas Valley Water District, in 1992, commissioned a study of the potential impacts of water restrictions artificially slowing growth in Southern Nevada. This study, entitled *The Impact of a Water Imposed Interruption of Growth in the Las Vegas Region* (undertaken by Dr. William T. White, et al) concluded that an interruption in growth would have far-reaching economic, fiscal and social impacts. We have likewise concluded that an interruption in growth, particularly a swift or severe interruption, would have significant negative economic, fiscal and social consequences.

Given that the study referenced above was completed more than a decade ago, and that the issue of growth remains an ever-present part of life in Nevada, the SNWA recently commissioned an update of the work previously performed by Dr. White and his colleagues. Though the work product commissioned by the SNWA can be generally referred to as an update, a slightly different – yet very important – clarification was made to the question being addressed by the research. The study recently commissioned by the SNWA, which is described herein, takes a broad look at the economic and fiscal consequences of an interruption in growth, regardless of the cause of the interruption.

The study described herein was conducted by Hobbs Ong & Associates, Inc. and Applied Analysis; both Nevada-based consulting firms specializing in public finance, policy research and applied economics. While these firms directed the compilation of the work product, very meaningful and valuable assistance was provided to the effort through the assembly of a panel of additional experts in the field of economics. This report and its findings were reviewed by this panel. It is noteworthy that this panel of additional experts included six Ph.D.-level economists; three from within the State of Nevada, and three from outside the State. The contribution made by these experts to the final work product was truly exceptional.

It is widely accepted that rates of growth can be affected by a litany of factors, including the supply of land, supply of other resources

necessary to accommodate growth, interest rates, acts of God, acts of war, availability of jobs and a variety of other factors. However, any interruption in growth, despite its cause(s), will have similar impacts upon the economic and social systems. Consequently, the cause of the interruption, while important to understand, is perhaps less important than its impact upon the social and economic well-being of the state. Put another way, the findings may have broader value if they are less dependent upon cause than upon effect. For this reason, this report concentrates its efforts upon the identification of impacts that may result from an interruption in growth, despite the reason for the interruption.

BACKGROUND

Growth in Nevada can be measured in a number of conventional ways, including changes in population, employment, income, and other fiscal and economic factors. Taken from a different angle, growth can also be measured as a component of an overall economy. That is, growth itself viewed as an industry working in conjunction with other industries to form our overall economy. Both ways of viewing growth can be helpful in evaluating impacts that changes in rates of growth might have upon the economy as a whole.

Expanding upon the above, the meaning of “growth” seems to be driven by the context in which the term is used. To some, the term conjures up feelings about only the less desirable consequences of growth (i.e., traffic, air quality and other strains on public infrastructure), despite the benefits that growth may provide. To others, the term represents the strength and attractiveness of the community or state as a whole. If the community were not highly desirable and attractive in enough ways, would growth even be an issue?

In the most balanced sense, both of the extremes noted above are appropriate when considering the effects and impacts of growth. It is true that growth provides for tremendous economic opportunities, including jobs, income and other forms of community wealth. At the same time, growth can also lead to increased congestion and other strains on public facilities and services. In the end, it is more a question of whether the benefits of growth outweigh the costs of growth or, conversely, whether the benefits associated with constrained growth are worth the accompanying costs.

APPROACH & METHODOLOGY

A review of Nevada's growth characteristics centers upon the establishment of "baseline" values, against which changes in otherwise expected rates of growth can be measured. It is important to note that these baseline values are not trivial, as disagreement about baseline values will surely lead to disagreement about deviations from the baseline. The projected rates of growth used in this analysis are derived from the forecasts prepared by the Center for Business and Economic Research at the University of Nevada, Las Vegas and the Office of the State Demographer. These two sources are the most widely accepted sources of population forecasts for the State of Nevada.

For other economic and fiscal information, the "IMPLAN" model was used. Again, this model is widely accepted among economists as a standard for producing "multiplier" data to be used in conjunction with economic forecasts. Thus, similar to the report proffered by Dr. White and his colleagues, this report has used accepted population estimates and one of the most widely accepted economic and fiscal models to produce baseline values for use as a measurement of impact for interruptions in Nevada and Southern Nevada economies. These projections are summarized in detail within the body of the full report, have only been referenced in this summary as is necessary to support the report's findings and conclusions.

The State of Nevada has experienced compound annual population growth of approximately 5.0 percent per year since 1960. The growth rate for the United States as a whole was 1.1 percent, while the western states averaged 1.9 percent per year. Over this same period, Clark County experienced a growth rate of approximately 5.5 percent. Forecasts prepared by the aforementioned sources indicate an expected growth rate of 3.2 percent per year from the year 2000 through the year 2010, declining to a rate of 1.5 percent per year through 2020. Forecasts for employment, and other employment-related statistics, generally follow this same pattern. This baseline forecast assumes that generally expected conditions will prevail throughout the forecast period. In other words, the forecasts do not presume further acts of terrorism, natural disasters, or other forms of interruption that would be difficult, or impossible, to predict.

It should be noted here that the declining rates of growth described above are consistent with models developed for other communities that are reaching maturity. That is, it is widely accepted that fast-growing communities grow initially at accelerated rates and, over time, tend to move more toward national norms as they reach

maturity. Thus, it is less a question as to whether declining rates of growth will occur than it is when they will occur.

As a means of measuring the impacts of various levels of interruptions in growth, the analysis focuses upon the construction industry within the state and Southern Nevada. Clearly, if growth patterns were altered, the construction industry would be the most directly affected component of our overall economy. Beyond the direct impacts upon the construction industry, there would also be indirect impacts upon other industries as well as induced impacts created by altered spending patterns. It should be emphasized here that while the most direct impacts of an interruption in growth would be felt by construction-related industries, nearly all other segments of the economy – including the average household – would also feel the effects. For this part of the analysis, the use of IMPLAN to determine the inter-dependencies of the various components of our economy proved invaluable.

The construction industry in Clark County supported 77,700 direct jobs in 2003, or roughly 8.6 percent of the 907,700 positions within the county. When indirect jobs are added, the construction industry supports a total of 157,400 jobs, or 17 percent of total positions. Looking at income, construction-related activities accounted for 11.2 percent of total labor income within Clark County in 2003 (\$3.8 billion of a total \$33.7 billion in county income). From a sensitivity standpoint, \$1.71 in income is lost throughout the overall economy for every \$1.00 lost within the construction sector. Construction-related output amounted to \$11.6 billion, or 13 percent of the total Clark County output of \$88 billion in 2003. For every \$1.00 in construction activity, \$1.59 is created within the total economy. The foregoing clearly establishes the construction component of the Clark County economy as an extremely significant and far-reaching part of the overall economy.

From a fiscal perspective, construction is also a major force in the State and local government fiscal systems. Based upon analysis performed as a part of this project, it is estimated that construction-related activities were responsible for generating \$244 million in annual state and local revenues in fiscal year 2001-2002 (from taxes, fees, charges, etc). Beyond this, an additional \$486 million in required infrastructure improvements (i.e., exactions) were paid for by the construction industry

When consideration is given to the fact that the State spends 53 percent of its general fund revenues in support of education, and 28 percent in support of various health care programs, the meaning of the above numbers becomes clear. Local governments in Southern

Nevada likewise spend a dominant part of their general fund budgets in support of public safety, criminal justice, local transportation, and other critical activities. The clear inference is that reduced general fund monies at the state and local levels will clearly impact the programs that are supported by these units of government. This is where the average person, not just those directly or indirectly employed in construction-related activities, would undoubtedly feel the impacts of an interruption in the growth sector.

It should also be added here that, while a majority of the growth under discussion has occurred in Southern Nevada, the impacts of an interruption would not be confined to Southern Nevada. Based upon both Nevada's fiscal system (which ties its various local governments together through the sharing of intergovernmental revenues), and the interplay between industries within the state (regardless of physical location), an interruption in Southern Nevada's growth would be felt throughout the state.