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**Economic and Revenue Impacts**

**of The Caterpillar Tucson Mining Center**

**On the Rio Nuevo District**

**and the City of Tucson**

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**1.0 INTRODUCTION**

Applied Economics was retained by the Rio Nuevo Multipurpose Facilities District (the District) to perform an economic impact analysis of the new headquarters of the Caterpillar Surface Mining and Technology Division in downtown Tucson (Caterpillar Tucson Mining Center). The site is located at the southwest corner of Cushing Street and the Santa Cruz River. The building will include thee stories totaling 146,000 square feet plus 150 structured parking spaces and additional surface parking on a 7.85 acre parcel. This parcel was owned by the City of Tucson and previously used as a landfill. The Rio Nuevo District purchased the parcel from the city and is making a number of additional investments to make the site construction-ready.

The Rio Nuevo District signed a lease with Caterpillar Global Mining LLC in June of 2017 that details the terms of the Government Property Lease Excise Tax agreement as well as the construction financing and subsequent lease of the property to Caterpillar. Under the terms of this lease, the District agreed to (a) provide an additional $2 million to help defray Caterpillar’s moving costs, (b) to purchase the site from the City of Tucson, (c) to spend up to $43 million to build the new facility (“Building Costs”), and (d) to lease the facility to Caterpillar for a period of up to 15 years with the net rent equaling the amortized principal and interest due on the promissory note issued to finance the new facility pursuant to the Construction Loan Agreement. Caterpillar has an option to purchase the building prior to the termination of the lease for the amount of the unpaid balance of the construction loan. If they do not exercise this option, the building and land will be conveyed to Caterpillar at the end of the 15 year term. As part of this lease agreement, the District will incur unreimbursed costs associated with site preparation of $6.9 million, capitalized interest of $650,000, and at the end of the lease they will convey ownership of the land to Caterpillar which was valued at $3.0 million.[[1]](#footnote-1)1

In addition to these costs to the District, the project would also be eligible for a Government Property Lease Excise Tax (GPLET) agreement that would result in the replacement of all real property taxes during the 15 year term of the agreement with a lease excise tax. The lease excise tax, which is based on a statutory rate per square foot based on the type of use, would be less than the amount of property tax that would have been paid without the GPLET, resulting in an incentive to the lessee. In addition, since this property is located in a Central Business District (CBD), the project would be eligible for an abatement of all lease excise taxes for the first eight years. In addition, in years nine through fifteen, the District has agreed to reimburse a portion of lease excise fees paid by Caterpillar. This analysis is intended to provide a framework for understanding the economic and revenue impacts that the project would have on the District and the City of Tucson relative to the amount of incentives being offered.

**1.1 Project Description**

The Caterpillar facility would include an estimated 146,000 square feet of Class A office space in a three story building. There would be a two-story, above-ground parking deck with 150 spaces and additional surface parking with 355 spaces. The total construction cost is estimated at $43.0 million, including both hard and soft costs.

In return for the incentives received, Caterpillar is obligated to create 635 jobs at an average wage of $90,000 by November 2021. It is anticipated that they will start with 50 jobs in 2017 and ramp up to 635 jobs and a total annual payroll of $57.2 million by 2021. These will primarily be executive and engineering jobs that are being transferred from Caterpillar facilities in Illinois and Wisconsin.

## 2.0 IMPACT SUMMARY

The construction of the new Caterpillar Tucson Mining Center in the Rio Nuevo District would provide significant economic benefits to the city and the District.

* About 280 direct construction jobs and 160 additional indirect construction jobs would be supported in the City of Tucson during the construction period. The total construction impact is estimated at $59.5 million.
* Once completed, the project could generate an annual economic impact of $256.7 million at full operating levels, or a total of $3.72 billion over the next 15 years of operations through 2033, which represents the term of the GPLET.

1. The Caterpillar Tucson Mining Center is anticipated to directly create at least 635 jobs. The operations of Caterpillar could also support over 860 indirect jobs at *other local businesses* in Tucson. These indirect jobs are the result of business to business purchases made by the headquarters, as well as local spending by employees.
2. An estimated $57.2 million in direct personal income for Caterpillar employees, and about $87.5 million in total direct and indirect personal income would be generated by the operations annually, creating the potential for significant local expenditures by employees and their families.

* In terms of local tax revenues, the Caterpillar facility would directly generate an estimated $1.9 million in construction sales tax to the city, District, state and RTA, as well as $3.5 million in lease excise taxes and personal property taxes during the term of the agreement. Caterpillar employees living in Tucson could generate an additional $59.8 million in local and state tax revenues over 15 years.
* The project could also qualify for a GPLET. The lease excise tax revenues associated with the GPLET are accounted for in the revenue impacts above. Note that the time horizon for the GPLET would extend out 15 years, beginning when the certificate of occupancy is issued. If granted, the savings to the prime lessee from paying lease excise taxes instead of property taxes, plus the value of other reimbursements and costs paid by the Rio Nuevo District to the prime lessee, is estimated at $21.9 million over 15 years (Figure 1). During that period the project would generate direct and employee property, sales and income taxes, for a total benefit to the state and local governments of $65.2 million over 15 years. Thus, the benefit to the city, county and state would significantly exceed the value of the GPLET.

**FIGURE 1**

**VALUE OF CATERPILLAR TUCSON MINING CENTER   
TO STATE AND LOCAL GOVERNMENTS**

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**FIGURE 2**

**VALUE OF CATERPILLAR TUCSON MINING CENTER   
TO CITY OF TUCSON**



The Caterpillar Tucson Mining Center would generate new tax revenues for the District and the city, as well as creating approximately 635 new high-wage jobs in Tucson. Additionally, it will create a magnet for additional development on the west side of Interstate 10, including transit-oriented development along the Modern Streetcar line. Existing local businesses could also benefit from local spending by the 635 new employees.

### 3.0 ECONOMIC IMPACT ANALYSIS

The economic impacts resulting from the new Caterpillar Tucson Mining Center in the Rio Nuevo District include both the one-time construction impacts and on-going operations impacts. These impacts are quantified in terms of direct and indirect jobs, personal income and output that would be generated by the project. Indirect impacts are the result of the multiplier effect and capture supported supplier and consumer businesses in the District and the City of Tucson that would benefit from the new mining center operation.

**3.1 Construction Impacts**

The proposed construction costs are estimated at $43.0 million, excluding land and FF&E (Figure 3). Both hard and soft costs associated with the project create local economic impacts. Construction is expected to take approximately 15 months with occupancy in first quarter 2019.

**FIGURE 3**

**CONSTRUCTION COSTS**

**FOR THE CATERPILLAR TUCSON MINING CENTER**

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The multiplier effects of this construction spending on the city would result in a total increase in economic activity of about $59.5 million (Figure 4). These impacts are projected to occur during the construction period in 2017 and 2018. The approximately 280 direct jobs and 160 indirect and induced jobs would result in more than $20.7 million in additional personal income in the City of Tucson during the construction period.

**FIGURE 4**

**CONSTRUCTION IMPACTS OF THE CATERPILLAR TUCSON MINING CENTER**



**3.2 Operations Impacts**

Once construction is completed, the new headquarters will create at least 635 permanent jobs, most of which will be filled by new residents transferred from Caterpillar sites in Wisconsin and Illinois. The total economic activity from on-going operations of the headquarters is shown in Figure 5. The 635 new jobs and $57.2 million in direct personal income will generate an estimated $169.6 million in increased direct output each year.

**FIGURE 5**

**ANNUAL OPERATIONS IMPACTS OF THE CATERPILLAR TUCSON MINING CENTER**



The multiplier effect of this increase in business activity will result in a total annual impact of $256.7 million, or $3.72 billion over the next 16 years. Note that while the GPLET would not begin until 2019 when the certificate of occupancy on the building is issued, Caterpillar already has employees in Tucson related to this project in temporary office space. The approximately 1,500 direct, indirect and induced jobs supported by the Caterpillar operation will result in about $87.5 million in annual personal income in Tucson, or a total of $1.27 billion over the next 16 years.

The direct and indirect jobs generated by this project would support a total local population of about 2,600 people in the City of Tucson, based on local commuting patterns, most of whom would be new to the state. Supported population includes families of direct employees, as well as families of employees at related supplier and consumer businesses. This estimate assumes that about 79 percent of the employees will live and work in Tucson, based on local commuting data from the American Community Survey.

The differences between direct and total economic impacts are called multiplier effects. Multiplier effects are a way of representing the larger economic effects on the local economy. The multiplier effects translate an increase in output into a corresponding increase in jobs and personal income. The total increase in output includes the impacts on other local supplier and consumer businesses. In essence, the multiplier effect represents the recycling of local spending. This process creates new business opportunities.

The multipliers used in this analysis are from IMPLAN, a national vendor of economic impact software, and are specific to the City of Tucson. Industry specific multipliers were used for headquarters operations and commercial construction. The average output multiplier for this development is 1.51. This means that for every $1 million of annual output created by the headquarters, an additional $510,000 in economic output and 5.1 jobs are supported at other local businesses. On average, the income from these indirect jobs is estimated at about $35,000 per employee.

### 4.0 REVENUE IMPACTS

In addition to supporting jobs, income and output at related businesses in the city through multiplier effects, the new Caterpillar Tucson Mining Center would also generate significant local tax revenues, primarily through the additional revenues resulting from high-wage Caterpillar employees. In total, the project could generate approximately $23.3 million in direct and employee tax revenues to city, county and schools, $634,000 to the District over the next 15 years, and an additional $41.3 million to the state.

**4.1** **Direct Revenues**

Total direct revenues from the project are estimated at $5.5 million from 2018-19 to 2033, including lease excise, sales and personal property taxes to the city, county, school district, state and other local taxing districts (Figure 6). The project would be eligible for a GPLET that would result in the company paying lease excise tax instead of real property taxes. Since the property is located in the Central Business District, lease excise taxes would be abated for the first eight years, but would be paid in years 9 thru 15. Under the state statute an excise tax is established for the building based on the type of use and is calculated based on the gross square footage of building. The GPLET requires that the land and improvements are conveyed to a government entity (such as the District) and then leased back for private use. At a current excise rate of $2.53 per square foot for the office and $219.75 per parking space, the property would generate $402,343 in annual excise tax revenues.[[2]](#footnote-2)2 Seven percent of the lease excise tax is allocated to the city, 13 percent to the county, 7 percent to the community college and 73 percent to the Tucson Unified District.

**FIGURE 6**

**STATE AND LOCAL REVENUE IMPACTS OF THE CATERPILLAR TUCSON MINING CENTER**

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The project would generate one-time sales taxes from new construction estimated at about $634,000 each to the District and the State, and $680,000 to the city and RTA in 2018. There would also be a modest amount of personal property taxes on the $7 million in estimated FF&E of $175,000 over 15 years. The depreciated value of the equipment would fall below the statutorily exempted amount in 2026, and so no additional personal property tax revenues are shown beyond that point. It is likely that Caterpillar would purchase replacement equipment prior to 2026, although specific data on these future purchases is not available at this time.

**4.2 Employee Revenues**

Along with the direct taxes generated by Caterpillar, it is anticipated that $59.8 million in taxes could be generated by employees over the 15 year term. Using the results from the economic impact analysis, it is possible to estimate employee tax impacts.

Employee property tax revenues, which represent property taxes on employee housing, were based on average residential assessed per capita in Tucson, times the annual supported population associated with the project, times an average citywide property tax rate of 15.91 percent. Property taxes generated by Caterpillar employees are estimated at about $91,000 per year to the city, and an additional $813,000 per year to the school district, community college and county. All total, the project could generate about $12.9 million in employee property tax revenues to all jurisdictions combined from 2019 to 2033, based on the assumptions used in this analysis.

Employee sales tax revenues include sales taxes paid by Caterpillar employees. There would be additional sales taxes generated by the 860 new indirect and induced jobs that are not included here. Sales taxes are estimated by multiplying total personal income from the economic impact times 31 percent (share of taxable expenditures), times the Tucson live-work ratio of 79 percent, times the sales tax rate.[[3]](#footnote-3)3 No residency ratio is used for RTA or state employee sales tax. Employee sales taxes to the city and RTA are estimated at $6.2 million over 15 years (Figure 7). Additional sales taxes generated to the state are estimated at $14.1 million over 15 years. Since it is not clear what share of employee spending would occur in the District, no employee-driven District sales taxes are shown in Figure 5.

In terms of personal income tax, Caterpillar employees could generate approximately $26.5 million in revenues to the state during the term of the GPLET. State income taxes are calculated using average income per employee and current tax schedules from the Arizona Department of Revenue. Note that there would be additional income taxes from the indirect and induced employees that are not included here.

**FIGURE 7**

**REVENUE IMPACTS FROM CATERPILLAR TUCSON MINING CENTER EMPLOYEES**

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**4.3 GPLET and Other Incentive Impacts**

In addition to calculating revenue impacts to local and state governments, this analysis also considers the GPLET impacts in terms of the revenues generated by the project relative to the amount of benefit to the property owner (prime lessee). A.R.S. 42-6209 requires that the economic and fiscal benefit to the state, county and city in which the government property improvement is located will exceed the benefits received by the prime lessee. The District is proposing a 15-year term for the GPLET, during which the prime lessee would pay lease excise tax instead of real property tax. The prime lessee would also receive $12.2 million in additional incentives from the District.

In order to meet the statutory requirements, it is necessary to show that total revenues to the state, county and city would exceed the value of property taxes (in the absence of a GPLET) less lease excise tax paid during the term of the agreement. Revenues from the project include sales tax revenues from construction and on-going personal property and lease excise taxes, as well as sales, property and income taxes generated by Caterpillar employees.

Over the 15-year term, the public benefit to state and local jurisdictions is estimated at $65.2 million (Figure 8). In comparison, the benefit to the prime lessee is estimated at $21.5 million over the GPLET term, including incentives from the Rio Nuevo District. The benefit to the prime lessee includes the amount of property tax that would have been paid without the GPLET minus the amount of lease excise taxes paid. The estimated public benefit, or value of other tax revenues generated by the project, exceeds the property tax savings from the GPLET plus other incentives to the prime lessee by $43.3 million over 15 years, thereby meeting the requirements of the statute.

**FIGURE 8**

**PUBLIC BENEFIT VERSUS BENEFIT TO PRIME LESSEE**

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The foregone property tax revenues were estimated based on limited property value (LPV) per square foot for comparable Class A office in the downtown area. An average limited property value per square foot of $123.54 was used for the office and $42.52 for structured parking, resulting in a total LPV estimate of $20.3 million. It is assumed that the value would increase by 5 percent per year, based on recent increases in LPV for the comparable properties and statutory guidelines.

Other incentives provided by the District include a reimbursement of lease excise taxes paid in year 9 through 15 at the following rates: 87.5% in year 9, 75% in year 10, 62.5% in year 11, 50% in year 12, 37.5% in year 13, 25% in year 14 and 12.5% in year 15. In addition, the District will provide a $1.98 million relocation incentive. Other unreimbursed costs incurred by the District that benefit the Prime Lessee include $1,879,140 to relocate a sewer line on the property, $3,005,021 to remediate the site which was formerly a landfill, and $650,000 in capitalized interest related to the construction financing. At the end of the lease, the District will also convey the land, which was valued at $3.0 million, to the Prime Lessee. The total value of these incentives provided by the District is estimated at $12.2 million, which combined with the value of the GPLET is less than the amount of public benefit created by the project.

**4.5 Summary**

The proposed Caterpillar Tucson Mining Center described in this analysis will create both economic and revenue benefits for the Rio Nuevo District and the City of Tucson. The project would support a new jobs and payroll, and create additional tax revenues for the District and the city on a long-term basis. The 635 Caterpillar employees will generate new housing demand and consumer spending. Furthermore, it is likely that attracting a regional headquarters for a Fortune 100 company such as Caterpillar will seed additional related economic development activity locally. The company and its employees would also generate property, sales and income tax revenues to the state and to local governments in Pima County in excess of the value of proposed financial incentives over the next 15 years.

1. 1 AXIA Real Estate Appraisers, “An Appraisal Report of the Approximate 7.85 Acre Parcel of Land Located Along the South Side of Cushing Street, West of the Santa Cruz River, Tucson, Pima County, Arizona,” May 2016. [↑](#footnote-ref-1)
2. *2* *Lease excise tax rates are adjusted annually based on the percent change in the two most recent years of producer price indices for new construction. For the purpose of this analysis, a 1.0143 percent increase is applied annually beginning in 2018.* [↑](#footnote-ref-2)
3. *3* *According to the Census Bureau Consumer Expenditure Survey persons in the median income range for this project spend about 31 percent of their income on taxable goods.* [↑](#footnote-ref-3)