

**Hermosa Advisory Panel Meeting #5  
Wednesday, August 18, 12p-2p**

**Patagonia Public Library, 46 Duquesne Ave (inside Cady Hall)**

The meeting of the Hermosa Advisory Panel was called to order at 12:05 pm on August 18, 2021 at Cady hall, 46 Duquesne Ave by Angie Donelson.

Attendance

- Meeting Facilitators: Angie Donelson, Robin Breault
- South 32 Hermosa Advisory Panel Members: Carolyn Shafer, Damian Rawoot, Jaime Chamberlain, Linda Shore, Liz Collier, Marcelino Varona, Maritza Cervantes, Olivia Ainza-Kramer, Ruth Ann LeFebvre
- South 32 Hermosa Advisory Panel Members Absent: Adelmo Sandoval, Gerry Isaac, Mark Beres, Nils Urman, Michael Young
- South32: Melanie Lawson; Collette Brown-Rodriguez (Tribal Affairs Director), Andy Thompson (Senior HR Director) Skylie Estep (HR Business Partner)
- Scribe: Lizbeth Perez

**12:05 Working Lunch**

**Review Agenda and Acceptance/Amendments to Meeting Minutes**

- Quorum not present when minutes were presented for acceptance; approval is tabled until next meeting
- South 32 will provide recording of Tomas Goode's follow up session with panelists this month and slide deck from previous meeting

**Scope of work update:** Ty Ferre, University of Arizona Distinguished Professor of Hydrology and Atmospheric Sciences, is retained as a third-party hydrologic expert

- Angie asked panelists to review his scope of work and provide feedback if there are any concerns

**12:10 Panelists: Report Updates**

- Carolyn Shafer for Patagonia Area Resource Alliance and Patagonia Flood and Flow Committee - Refer to attachment A. Recording of the presentation PARA hydrologists gave to county supervisor will be linked
- Jaime Chamberlain: have groundwater concerns been addressed by S32?
- Melanie Lawson: Some will be contingent on prefeasibility study; others will be address by Ty Ferre and Tomas Goode.

- Angie Donelson: We can also have Ty consider questions raised in PARA's current update this month.

**12:25 Economic Strengths/Skills Crosswalk Overview**

- Angie Donelson walks through current/historical trends in US Bureau of Labor Statistics data of Santa Cruz County - Refer to attachment B.
- Marcelino Varona: In Nogales, there was an expectation we would see sales taxes flatline during pandemic; however, online shopping seemed to help maintain stable sales tax revenue
- Angie Donelson: yes, change in laws allowed for local governments to collect money from online business; out-of-state online businesses without a physical presence are now required to collect and remit tax on their sales
- Jaime Chamberlain: There is another reason Nogales had better than expected revenue: the SR189 project. Construction generated significant sales taxes locally for Nogales. Construction will be finished in October; after that, how will the community survive? South 32 could be a pillar industry, but needs to also address concerns from the panel/ the local community.
- Angie Donelson: That is the purpose of the charter – for the panel to ask, and South 32 to answer questions and concerns.
- Carolyn Shafer: As to watershed concerns, this is a major tributary to the Santa Cruz River and that watershed – Refer to Attachment C (map of the watershed – Carolyn provided after the meeting).
- Angie Donelson: We will get into more of these issues at our next meeting. Focusing the rest of the discussion today on the continued workforce discussion
- Robin Breault shares “skills” crosswalk – Refer to Attachment D.
  - Skills needed for promotion in the workforce. Even if you do not have higher wage skill sets now, they can be developed in strategic ways.
  - Automation and technology needs will require many to be reskilled.
  - Goal: create these crosswalks in October

**12:39 South 32 Human Resources Staff: Workforce Skills Needed**

- Refer to Attachment D (South 32 presentation)
- South 32 is working on ways to discuss skills/technologies that appeal to local youth. Hermosa could be first mine in US to supply manganese to support US initiatives for renewable energy
- Looking at electric vehicles and automated technology to use at Hermosa
- Current/future workforce
  - o 100 employees currently, office and site individuals at Patagonia and Tucson
  - o Prioritized site hiring for Santa Cruz County residents, then surrounding counties
  - o Brought in some specialized knowledge from other mining areas and other S32 locations

- Current positions they have on staff:
  - o Water treatment plant operators, processing technicians, facilities and maintenance technicians, electricians
  - o Environmental staff, geologists, mining engineers, metallurgical engineers, geotechnical engineers
  - o Administrative professionals: finance, human resources, corporate affairs, safety professionals, purchasing and supplies
  
- Future workforce – looking at hiring for:
  - o Diesel Mechanic / Fixed equipment mechanics
  - o Environmental technicians
  - o Heavy equipment operators
  - o Industrial electricians
  - o Instrumental technicians
  - o Water treatment plant technicians
  - o Welders
  
- Will have to develop skills for certain opportunities
- Goal is to partner with locals such as panelists to better understand what is available in the area
- Want to utilize existing skill trades and operational training programs
- Looking to build and develop capacity in Santa Cruz County and possibly partner with programs that are in place in Pima County, such as JTED
- Recognizes concern in bringing in new people from outside the area, wants to build upon local workforce that will stay
  
- Linda Shore: Are your truck drivers South 32 employees?
- Skylic: There is a combination of staff and contractors, but approximately 90 are contractors, not directly employed by S32
- Ruth Ann LeFebvre: Where could I see job descriptions of various S32 employees?
- Skylic: Unless there was a vacancy they were recruiting for, position description wouldn't be posted
- Maritza Cervantes: It is difficult to find highly skilled or highly experienced people. How will lines be drawn for hiring for what is considered highly skilled versus unskilled?
- Andy Thompson: We have the same interest in workforce development and will partner skilled with unskilled workers to transition knowledge. Ratios haven't been worked out exactly, but experience has shown 1 skilled person to 6 unskilled person generally is effective.
- Jaime Chamberlain: Mine wages have to be competitive for you to hire to keep up in the mining industry; however, the produce industry is concerned you will be taking some of its labor force.

12:55 Rapid Response Sessions: Workforce Assets and Gaps

The following panelists provided overview of their employment skills programs in relation to questions, as shown below:

Panelist	What you do/what workforce needs to do you address?	Who are you working with/ training and partnering with?	What are your practical and/or institutional barriers?
<p>Maritza Cervantes, Santa Cruz County Workforce Innovation and Opportunity Act Director</p>	<ul style="list-style-type: none"> <li>- Title 1, Santa Cruz Country workforce development career services and training</li> <li>- Title 2, Continuing education</li> <li>- Title 3, Department of Economic Security services</li> <li>- Title 4, Vocational Rehab, for individuals with disabilities.</li> <li>- Eligibility requirements: 1) in-school youth ages 14-21; 2) Out-of-school youth who dropped out or finished high school without plan, ages 16-24; 3) Adult training program; 4) those who have lost a job; 5) Incumbent workers program</li> <li>- Offers individual training in the classroom, on the job training, apprenticeship &amp; customized training, incumbent worker training</li> </ul>	<p>Largest group is participants working towards CDLs (certified drivers license), they work with driving schools to get individuals their license</p>	<p>Identifying employers' specific needs. Have hired business specific needs finder to figure this out, will have data in the future</p>
<p>Liz Collier and Marcelino Varona, Santa Cruz County Provisional Community College Board</p>	<ul style="list-style-type: none"> <li>- Not yet an accredited community college; a provisional community college that hires providers to deliver classes.</li> <li>- Will partner with anyone if students can benefit from it.</li> </ul>	<p>Partners have that data, but don't always share it. PCC says Santa Cruz County campus is enrolling at higher rates than any other.</p> <p>Partners:</p> <ul style="list-style-type: none"> <li>- UofA, most popular courses are business related</li> <li>- Wants to partner with a university</li> </ul>	<p>Will take money and time to get classes set up for skills requested, but an option is to get a truck to shuttle people over to PCC</p> <p>Partnering with Sahuarita for course development might be an option in the future</p>

Panelist	What you do/what workforce needs to do you address?	Who are you working with/ training and partnering with?	What are your practical and/or institutional barriers?
		south of the border to train- Mexican business - With high school via dual credit: NUSD and Rio Rico	
Olivia Ainza-Kramer, President & CEO, Nogales-Santa Cruz County Chamber of Commerce Visitor & Tourism Center	<ul style="list-style-type: none"> <li>- COVID revealed many businesses were not prepared, so support involves preparing them for emergencies.</li> <li>- Created small business resource center.</li> <li>- Did case-by-case analysis on what they needed to succeed.</li> <li>- Helped them through language and tech barrier</li> <li>- Informed them and guided them towards proper channels and assistance, as well as partners.</li> <li>- Worked with an expert on Federal recruitment plan to be able to sell to locals and bigger entities</li> <li>- Worked on the internet presence of businesses</li> </ul>	<ul style="list-style-type: none"> <li>- Diverse, with large corporations and mom &amp; pop shops.</li> <li>- Scattered all over Santa Cruz County, Nogales and Tucson</li> </ul>	What can be done to prepare small businesses as potential suppliers to South 32? Expand their ecommerce & online presence. Prepare them to be found, prepare them to be able to supply to S32 vendors (Some businesses are not even incorporated).
Jaime Chamberlain, Chamberlain Distributing	Majority in the produce industry fell in love with the business when they were young as they were immersed in the industry.  Other opportunities are involved in this work like marketing, technology. Include the context of the mine, how it correlates to important future endeavors.	Mining jobs/produce could partner in logistics recruitment. Logistics is a crossover industry sector in Santa Cruz County that serves both mining and south 32. For example, transportation and warehousing are involved, and require	We should be starting with 7 <sup>th</sup> graders who are interested in our industries. Get to youth early enough to educate them about the opportunities. This is also a challenge for mining.

Panelist	What you do/what workforce needs to do you address?	Who are you working with/ training and partnering with?	What are your practical and/or institutional barriers?
		<p>secure/clean rooms and safety protocols.</p> <p>Mining jobs/produce could partner in recruitment, but mining will likely be recruiting from the produce industry employment base because mining jobs pay twice as much.</p>	<p>Produce industry is an aging workforce, work is taxing.</p> <p>Produce industry needs more CDLs. Drivers in the future will be critical like a nurse in the US</p>
Adelmo Sandoval, Nogales Unified School District	Was unable to attend, will hear from at next meeting		
Michael Young, Patagonia Union High School	Was unable to attend, will hear from at next meeting		

**Discussion:**

- Angie Donelson: Automation is happening in the trucking industry, but automated operators still need a CDL. Pima Community College is developing the first certificate program in the nation for automated vehicle operators partnership with TuSimple.
- Andy Thompson: CDL holders aren't something S32 is seeking, but they have transferable skills for S32

**1:40 Group Activity: What else do we need to know about workforce assets and gaps?**

Throughout the session, panelists identified, and at the end summarized two sets of questions:

What questions do you have about assets and gaps in the workforce programs that <u>already</u> exist?	What do we need to address? What can we realistically do about these workforce issues into the <u>future</u> ?
<ol style="list-style-type: none"> <li>1. Is there an adequate supply of skilled labor in the area to meet the needs of the Hermosa Project?</li> <li>2. Would South 32 require vocational certifications that the Provisional Santa Cruz Community College can offer?</li> <li>3. Are there scholarships for adult education?</li> <li>4. How do we appeal mining jobs to high school seniors/freshmen in college?</li> <li>5. How do we educate youth about water issues in relation to mining?</li> <li>6. Can we bring the “Dig into mining” program into K-12 education? Digintomining.com</li> <li>7. Have you looked at the Dreambuilder program to help get business to write their business plans?</li> <li>8. What is South 32’s timeframe for opening operations?</li> <li>9. What will be the size of the workforce when South 32 is in full operations?</li> <li>10. Can we get specific about the type of training South 32 will need? What specialized certifications could be required versus degrees to meet “highly skilled” requirements?</li> <li>11. How do we get address the rumor that South 32 hires their own and provides lower paying jobs for locals?</li> <li>12. Is there a CDL licensed truck driver age limit?</li> <li>13. With limited staff and financial resources, how do you document a successful community outreach program?</li> <li>14. How long will it take for the Santa Cruz County Provisional Community College to provide specific courses in reference to South 32’s required skill sets?</li> <li>15. What are the demographics for Santa Cruz County as far as workforce numbers?</li> <li>16. What data have been documented as to the results of services provided, especially with the focus areas of service?</li> </ol>	<ol style="list-style-type: none"> <li>1. Quality of life is more important than salary</li> <li>2. Climate crisis is changing the world</li> <li>3. What are the projected demographic shifts in age groups in 5-10-15 years?</li> <li>4. How do we move goods other than by trucks?</li> <li>5. Internship programs</li> <li>6. What specific skills/certificate programs will be needed to work at the mine?</li> <li>7. Can South 32 engage the existing workforce development infrastructure in Santa Cruz County to tailor/develop a pipeline of local talent?</li> <li>8. How can careers be flexible and adaptable, and open to change?</li> <li>9. How can South 32 join in providing education through the provisional community college? Can we use South 32 experts to train, or provide certificates, in jobs needed?</li> <li>10. How do we retain employees once trained?</li> </ol>

**1:55            Wrap Up and Looking Ahead: September 15 meeting**

Melanie Lawson

- Presented community behavior standards survey and will be updating results for the panel.

Marcelino Varona

- Would like to see how water flows into the Santa Cruz River in the western part of the county.

Next meeting:

- Wrap up discussion of workforce development, with presentations from Michael Young and Adelmo Sandoval. Those discussions will be used to take a deeper dive into workforce development issues for October meeting.
- Ty Ferre, hydrological intermediary, to attend panel
- Scope of work for South 32 upcoming social impact assessment

Meeting adjourned 2:05



**Attachment A**

**INFORMATION for the Santa Cruz County Advisory Panel on Hermosa Project  
Presented by Panelist Carolyn Shafer as PARA Board Member: August 18, 2021**

Here is a link to hydrologist Laurel Lacher's presentation to the Santa Cruz County Supervisors on August 3:

<https://drive.google.com/file/d/1WzqvXcUAq5KQTOiBGRQeUHDtraQRdW2O/view?usp=sharing>.

Please note that the introduction slides and audio have been added. PARA was screen recording the ZOOM call and there was a glitch at the beginning of the video because of how the two applications interact. Thus, there are a few seconds of the presentation lost.

**Honoring that everyone's time is quite busy these days, here is a summary of the concerns relative to water quantity issues and water quality issues:**

**WATER QUANTITY QUESTIONS:**

What is the predicted life of mine?

What is the predicted impact of mine dewatering and post-mine recovery?

Areal extent?

Change in groundwater level in shallowest aquifers?

Change in spring and stream flows?

How much of Harshaw Creek discharge (from mine and natural) will be captured by mine pumping?

Will springs dry up?

How will dewatering putting and/or Harshaw Creek discharge affect Sonoita Creek?

Will mine discharge to Harshaw Creek exacerbate downstream flooding or damage infrastructure (eg, basements, shallow wells septic system, etc)

What happens when high discharge in Harshaw Creek stops?

Threatened and Endangered species

Riparian vegetation

Climate change impacts?

**WATER QUALITY QUESTIONS:**

Will treated mine discharge decrease water quality downstream?

Potential threats to downstream wells/human health?

Potential impacts to surface waters/Threatened and Endangered species/human health?

Consideration for known downstream contaminants?

Will treatment plants be able to handle shifts in infant water quality from intercepted legacy mine working and shifts in geologic formations producing water? How will discharge water quality vary over time?

In the event of an accidental contaminant release, how will S32 protect downstream drinking water aquifers and surface waters?

Monitoring wells?

Early warning systems?

How will S32 deal with rising water levels mobilizing deep contaminants as groundwater recovers and impacts shallow/surface waters?

These are three sources for information relative to water issues in the Sonoita Creek Watershed that I recommend:

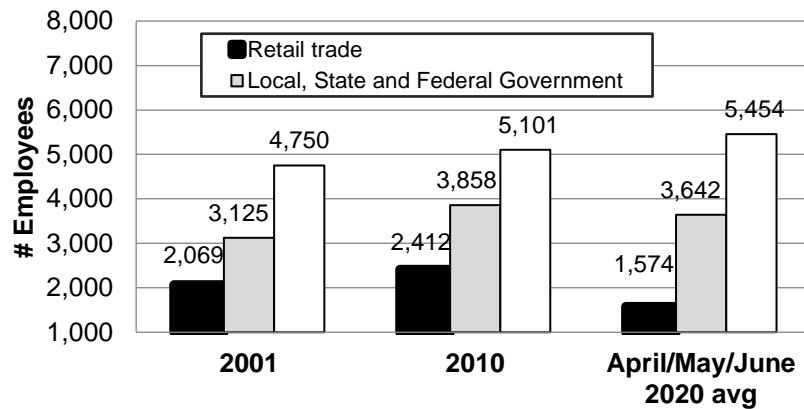
- The [Town of Patagonia "Sonoita Creek Flood & Flow Committee"](#) ("F&F") which conducts (currently via Zoom) monthly public meetings the second Thursday of each month at 10 a.m.
- [Friends of Sonoita Creek](#) ("FOSC")
- [Patagonia Area Resource Alliance](#) ("PARA")

## Attachment B: Santa Cruz County Economic Strengths and Trends

Employment as of 3<sup>rd</sup> quarter 2020 (12,847 employed)

- Public sector 3,642 = 28% of county employment, with half being federal employees
- Private sector 9,205 employees = 72% of employment

### Employment Trends in Santa Cruz County Arizona: 2011-2020



Source: Annual/Quarterly Census of Employment and Wages - Bureau of Labor Statistics

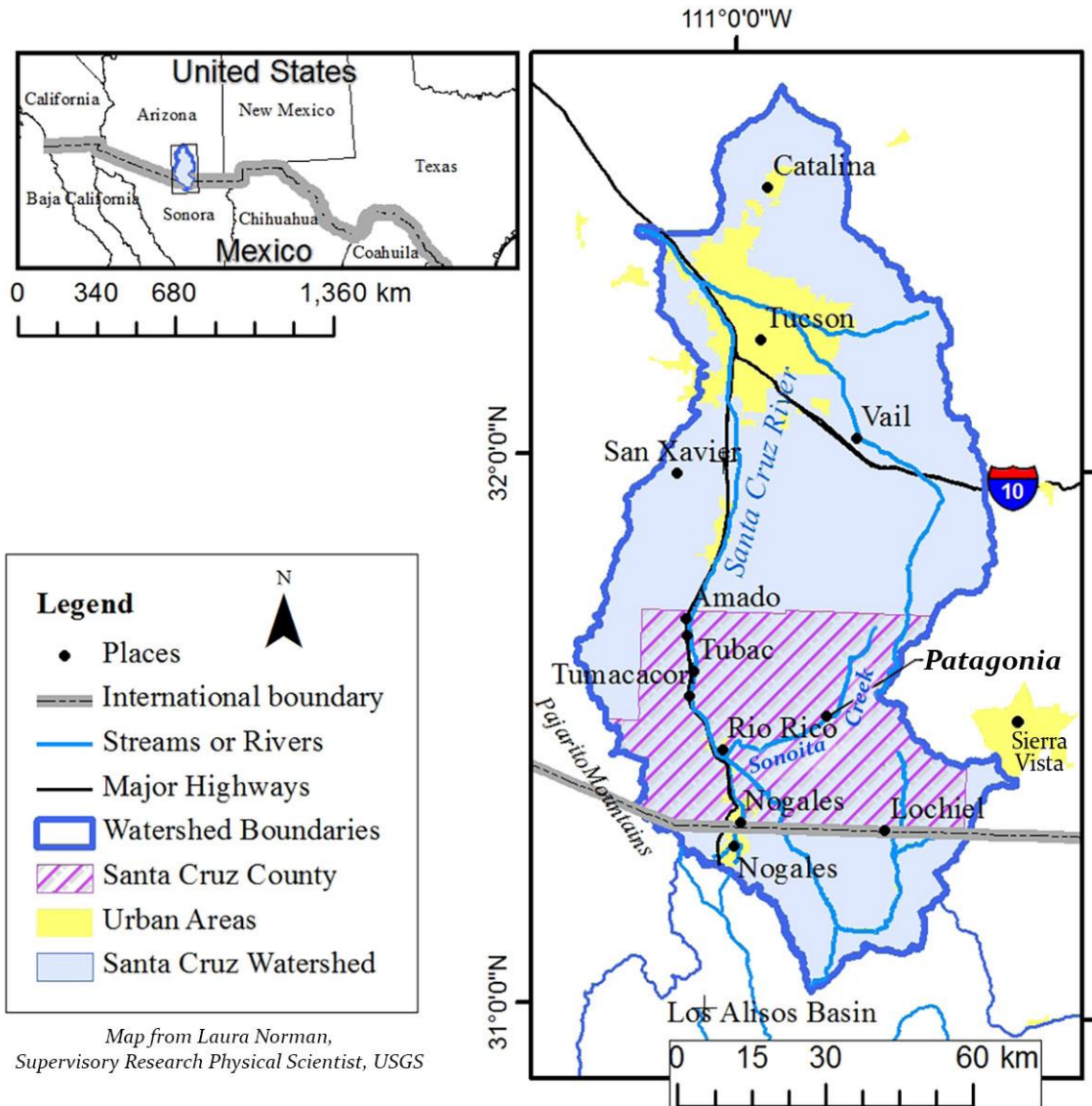
- The trade, transportation and utilities sector (the fresh produce industry) makes up the county’s largest sector of export-based employment (5,454 jobs or 59% of private employment)
- Employment in retail trade (which includes wineries, food services and accommodations) currently make up a quarter of the county’s private workforce. This sector was up 17% from 2001-2010 (increasing from 2,069 jobs to 2,412 jobs), but then declined 35% from 2010 to the second quarter of 2020 (declining from 2,412 jobs to 1,574 jobs). There were 1,866 retail jobs in Santa Cruz County the 3<sup>rd</sup> quarter of 2019.
- Median household income in Santa Cruz County is \$40,467, compared to **\$59,246 for Arizona (2015-2019 American Community Survey 5-Year Estimates, US Census Bureau)**. **The county median household income is 68% of the state median income**

### Employment, wages & economic specialization in Santa Cruz County - Selected sectors: 3<sup>rd</sup> Quarter 2020

Sector	Employment	Weekly wage	Location Quotient*
Transportation and warehousing	1,842	\$770	3.12
Wholesale trade	1,778	\$1,068	8.04
Natural resources and mining	597	\$658	2.37
Federal government	1,796	\$2,157	9.21
State and local government	1,846	\$1,119	1.44
Retail trade	1,574	\$590	1.16
Leisure and hospitality	928	\$409	0.96

\* Location Quotients identify industries unique and specialized in the local economy, compared to the national average. A location quotient higher than 1 (the national average), indicates a higher concentration of economic activity than for other sectors of the county economy. A location quotient of 3, for example, means that the local economy has three times more jobs in that sector than did the national economy.

Attachment C: Watershed of Santa Cruz County



Attachment D: Skills Crosswalk

**Low wage jobs have similar skills to higher-wage jobs**



## Attachment E – South 32 Workforce Development Operations



### WORKFORCE DEVELOPMENT OPERATIONS

SANTA CRUZ COUNTY,  
ARIZONA, USA



### WHY WORK AT HERMOSA?



Hermosa is considered one of the world's most significant undeveloped zinc, lead, silver and manganese resources. It's also one of the only significant undeveloped resource for these metals in America. These are commodities that are support transitioning to more renewable energy and accelerating the shift toward electric vehicles.

- Zinc is needed for wind turbines, battery storage, and solar panels.
- Lead is needed for electric vehicle batteries and battery storage.
- Silver is an essential coating on solar panels.
- Manganese, an element in steel production, is in demand for electric vehicle batteries.
  - › Manganese is a federally designated critical metal, but there is currently no manganese mining in the United States and no manganese metal production anywhere in North America.

Hermosa has the potential to provide the first U.S. production of manganese and meet U.S. needs domestically. South32 views Hermosa as a rare opportunity to innovate, too. Technology is changing fast, and we'll be at the fore as we look to create a carbon-neutral operation and use electric vehicles.



## CURRENT WORKFORCE (PROJECT)



### Current Project Workforce:

- Approximately 100 South32 employees (all locations – Tucson Office, Patagonia Office, & Project Site)
- Staff hiring is prioritized by:
  1. Santa Cruz County;
  2. Surrounding Counties (Tucson, Arizona area);
  3. Western United States;
  4. Specialized technical knowledge from other South32 locations globally

### Current Roles in the Workforce:

- Water Treatment Plant Operators
- Core Processing Technicians
- Electricians
- Facilities Maintenance Technicians
- Environmental Technicians
- Environmental Specialists & Engineers
- Geologists
- Mining Engineers
- Metallurgical Engineers
- Geotechnical Engineers
- Finance Professionals
- Human Resources Professionals
- Corporate Affairs Professionals
- Project Management & Construction Professionals
- Safety Professionals
- Purchasing & Procurement Professionals



SLIDE 3

## FUTURE WORKFORCE (OPERATIONS)



### Future Operational Workforce:

- Staff hiring is prioritized by:
  1. Santa Cruz County;
  2. Surrounding Counties (Tucson, Arizona area);
  3. Western United States

### Future Roles in the Workforce:

- Water Treatment Plant Operators
- Core Processing Technicians
- Electricians
- Facilities Maintenance Technicians
- Environmental Technicians
- Environmental Specialists & Engineers
- Geologists
- Mining Engineers
- Mobile Maintenance Technicians
- Metallurgical Engineers
- Geotechnical Engineers
- Electrical Engineers
- Finance Professionals
- Human Resources Professionals
- Corporate Affairs Professionals
- Fixed Plant Maintenance Technicians (Millwright)
- Process Controls Technicians
- Safety Professionals
- Electrical & Instrumentation Technicians
- Underground Miners
- Surveyors
- Laboratory Technicians
- Warehouse Technicians
- Purchasing & Procurement Professionals
- Maintenance Planning Professionals
- Various Supervisory & Management Professionals



SLIDE 4



## LOCAL WORKFORCE



### Workforce Development:

South32 is committed to hire and train a local workforce for operational phases of an underground mine. South32 anticipates the following means to mitigate risks associated with workforce development, readiness, and mobilization:

1. Utilization of existing skilled trade and operational training programs in Santa Cruz and Pima counties;
2. Recruitment and relocation of experienced skilled trade and operational employees to provide on the job training and knowledge transfer;

### Utilization of Existing Programs:

1. Explore capability and capacity of current programs within Santa Cruz County as well as Pima County (and surrounding area) to better understand:
  - a) What programs are ready now?
  - b) What programs are being developed?
  - c) What programs are anticipated in the future?
2. Flexibility of inter-county partnership for skills needed in Santa Cruz County

### Skilled Positions and Knowledge Transfer:

1. Hire highly skilled and experienced employees:
  - a) Teach entry-level workforce the fundamentals of their field of expertise (i.e., underground full cycle mining, circuit operation, mobile & fixed maintenance, electrical/E&I/process controls)
  - b) Safe mine operation
  - c) Workplace culture development
2. We will hire experienced individuals in conjunction with less experienced local employees with the expectation that the knowledge will be transferred and retained locally



SLIDE 5