

3/13/12



Micromanipulator

1555 Forrest Way, Carson City, NV 89706
775-882-2400 <http://www.micromanipulator.com>
fax: 775-882-7694 e-mail: MJackson@micromanipulator.com

Please accept my apologies for not being able to attend this meeting in person. I am visiting a customer, "On Semiconductor, Inc.", and trying to bring more high tech semiconductor test business to Carson City. That's what I do.

I'd like to express my appreciation to the board for taking the time to hear or read this letter and consider my input. It is a privilege to be heard. If it is being read out loud, to those in the audience, thank you for your indulgence as well.

During this meeting, I am sure you will hear several times about the need for emphasis on STEM (or STEAM) curriculums as well as the difficulty we manufacturers are having in finding well prepared employees, you will hear of the costs we incur to do training by ourselves, or even the difficulty in finding people who are prepared to successfully receive that training. These stories are all true and represent a key obstacle to our businesses.

Individuals more eloquent than I will speak to those issues. They will support the strategy and discuss the details. I myself would like to comment instead on two general aspects of what is happening here.

First, let me say that I recognize and applaud the effort put forth to train our children by the teachers and administration of the school district. I do not doubt their sincerity or dedication. I do believe they have a monumental task. Even with that dedication, I believe it is unrealistic to expect anyone to prepare all children for all possible futures.

Don't get me wrong, I am not advocating that we teach a student just what he or she wants to learn (although Nintendo may differ with me on that point), but I believe that to ignore the natural inclinations and talent of a student is tantamount to assigning them and the community to a loss of unique and valuable individual contributions.

While a well-rounded basic education is priceless, at some point, it becomes essential to introduce a certain degree of specialization into the curriculum to attain the level of understanding needed in modern manufacturing. I see the idea of "schools within schools" as a good approach to do this.

Secondly I think it is important to recognize the current activity within the business and especially the manufacturing community regarding education. Manufacturers are applying valuable resources to this effort with an amount of intensity that I have not seen before. I myself am a member of the Manufacturing Collaborative Advisory Committee, working with WNC, and am participating on the Board of the Dream it Do It program. The effort is substantial but so is the priority.

In business, you learn quickly that it is a special event when your customer is engaged and goes out of their way to work with you. When that happens, the results can be spectacular.

We in the business and manufacturing community are your customers. We are engaged and we are willing to apply resources to make you, our students and our businesses more successful through programs like the one being discussed tonight. So that we both may achieve the highest level of success possible, please listen to us.

Thank you again for your time and consideration.

Sincerely,

Mike Jackson

President

The Micromanipulator Co., Inc.



JUMP START! *your college degree*

Western Nevada College



SUSAN KEEMA, ASSISTANT SUPERINTENDENT, CCSD
JOHN KINKELLA, DEAN OF STUDENTS, WNC

“Jump Start College” Pilot Semester Data

200 Student participants

5 School Districts (Carson, Churchill, Douglas, Lyon, and Storey)

10 High Schools (Carson, Churchill County, Dayton, Douglas, Fernley, Pioneer, Silver Stage, Smith Valley, Virginia City and Yerington)

9 Cohorts

9 Teacher Assistants

17 College Faculty

33 Individual college classes

Instructional Sites:

3 College Campuses - Carson, Douglas and Fallon

3 High Schools - Fernley, Silver Stage and Yerington

“Jump Start College” Pilot Semester Student Success Data

Math Completion Rates:

WNC Average – 56.7%

Jump Start – 96.4%

English Completion Rates:

WNC Average – 64.4%

Jump Start – 98.5%

Total Course Completion Rates:

WNC Average - 73.4%

Jump Start – 98.2%

Individual High School Course Completion Data:



| Course Completion | WNC Average: | Carson Cohort: | Jump Start Overall: |
|--------------------------|---------------------|-----------------------|----------------------------|
| English | 64.4% | 100% | 98.5% |
| Math | 56.7% | 100% | 96.4% |
| Overall | 73.4% | 100% | 98.2% |

Jump Start Track A

- Courses taught by Western Nevada College Faculty on the Western Nevada College Campus
- Teacher Assistant Provided by WNC for the Track A Cohort

Course Offerings:

Fall, 2015

English 101

Math 126

EPY 150

Communications 101

Spring, 2016

English 102

Math 127

Philosophy 210

Psychology 101

Students who complete Track A can earn up to 24 college credits.

Jump Start Track B

- Courses taught by Carson High School Faculty on the Carson High School Campus
- Teacher Assistant Provided by WNC for the Track B Cohort
- College Latino Outreach Coordinator will act as Cohort Coach

Course Offerings:

Fall, 2015

English 095

Math 095

EPY 150 “College Success”

Spring, 2016

English 098

Math 096

Communications 101

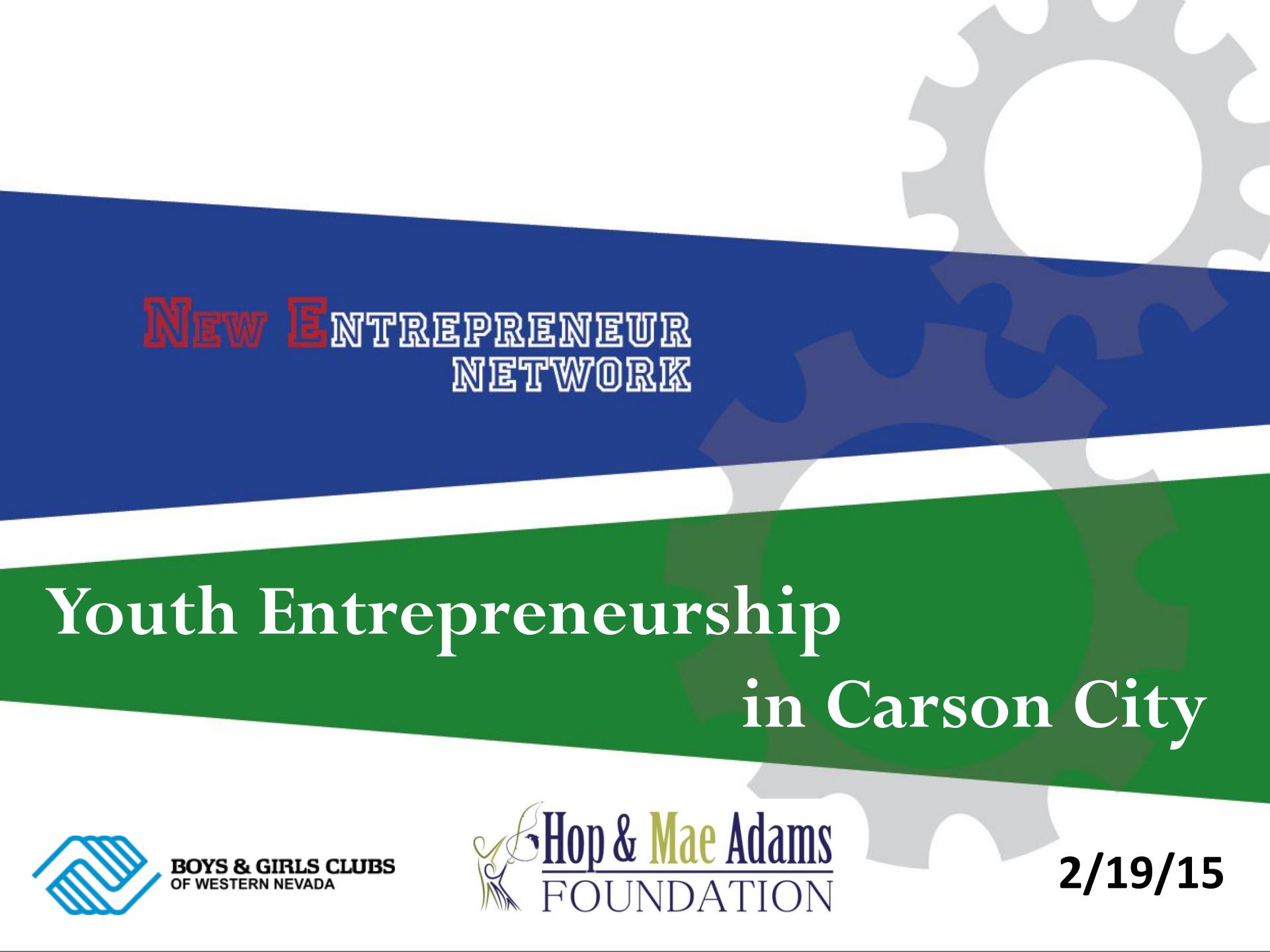
Students who complete Track B will leave CHS with the following advantages:

1. Students will start college in college-level English and math.
2. Students will complete 6 credits of college work prior to high school graduation.

Jump Start Track C

Construction Management &
Automated and Industrial Systems

- Courses taught at the WNC Carson Campus by WNC CTE Faculty
- Teacher Assistant provided by WNC for each Cohort
 - Provides Power School Connection to High School and Parents
- Admission based on high school recommendation and parent-student interview with high school and college staff
- **Course offerings lead to Certificates in either**
Construction Management or Automated and Industrial Systems



**NEW ENTREPRENEUR
NETWORK**

Youth Entrepreneurship in Carson City



**BOYS & GIRLS CLUBS
OF WESTERN NEVADA**



**Hop & Mae Adams
FOUNDATION**

2/19/15

Who?

- Hop & Mae Adams Foundation + Boys & Girls Clubs of Western Nevada
- Hop & Mae Adams Foundation Initiatives
 - Downtown Building Renovations
 - Adams Hub for Innovation
 - New Entrepreneur Network
 - ...more to come



NEW ENTREPRENEUR
NETWORK

Adams Hub for innovation



**New Entrepreneur
NETWORK**

Youth--Why Entrepreneurship?

- Inspired | Engaged | Dependable | Problem Solvers
- Complete High School | College | Career
 - US Dept of Labor 2002
- Culture



What is New Entrepreneur Network?

- New E Curriculum
- New E Club
- New E Biz

Jeff Glass
Exec Director

“We are what we
repeatedly do.

Excellence then, is
not a single act, **but a**
habit.”

Aristotle



Participants & Advisory Committee

Carson High School



**BOYS & GIRLS CLUBS
OF WESTERN NEVADA**



**Carson City
Juvenile Probation
Services**

**EAGLE VALLEY
MIDDLE SCHOOL**



**PIONEER
HIGH SCHOOL**



**CARSON
MIDDLE SCHOOL**



Western Nevada College

Carson City • Douglas • Fallon • Fernley • Smith • Yerington

**NEW ENTREPRENEUR
NETWORK**

Skills & Attributes

- Practical Skills and Experience in Starting and Running a Business
- Entitlement
 - First and Second Interviews
- Hopelessness
- Key Attributes
 - Leadership and Motivation of Team
 - Communication Skills
 - Listening
 - Personal Relations
 - Negotiation
 - Ethics



New E Curriculum

- In class guest speaker
 - Relevance of Traditional Coursework
- Entrepreneurship Classes
 - CHS credit, WNC credit (*TBD*)
 - Practical Skills
 - Experiential Learning for Starting & Running a Biz
 - Key Attributes



New E Club

- ***Launched*** Carson High School, Spring 2015
 - After School (this semester)
 - CHS class credit
 - 70+ students joined (addtl 80+ interested)
- ***Launched*** Pioneer High School, Spring 2015
- Launching Spring 2015
 - Boys & Girls Club
 - CC Juvenile Probation
- Experience
 - 13 Weeks
 - Certification
- **Fall 2015**



Practical Work Experience

- Walk the Walk
 - Retail Job Example
- Employment/Internships
 - Adams Hub
 - New E Biz Opps
 - CC Employers

SUCCESS in business requires
training, discipline & hardwork



New E Biz

- Application of Skills in a PAID work experience
 - Management, strategy, creative, production, sales, public relations, marketing
- Gourmet Nuts
- Additional Businesses
- Self-sustaining support of New E Network
 - Profits donated back to Boys & Girls Clubs of Western Nevada, Other Youth Initiatives

Contact

- Jeff Glass
 - start@newEnetwork.com
 - 775.222.0411

newEnetwork.com



**NEW ENTREPRENEUR
NETWORK**

Projected Impact: The TESLA GIGAFACTORY

CARSON CITY SCHOOL DISTRICT/CARSON CITY BOARD OF SUPERVISORS
JOINT MEETING

February 19, 2015



Primary Information Sources

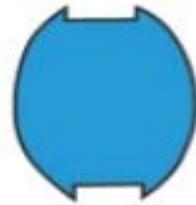
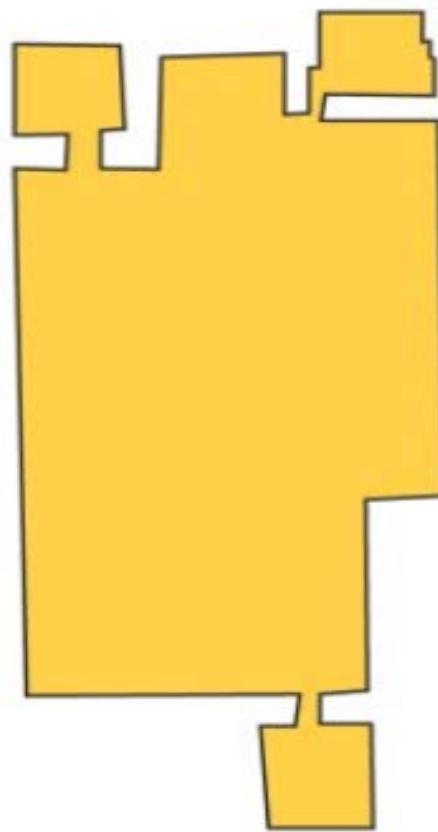
- Presentation at NV Energy January 15, 2015 “Impacts of Tesla Gigafactory in Storey County, NV”
 - Brian Bonnenfant
 - Center for Regional Studies, U of Nevada
 - Eugenia Larmore
 - Ekay Economic Consultants
- Others
 - US Bureau of Labor Statistics
 - Teslamotors.com
 - NV Governor’s Office of Economic Development
 - NV Department of Taxation
 - NV Department of Employment, Training, and Rehabilitation

TESLA GIGAFACTORY



50 GWh in annual battery production by 2020
Enough for 500,000 Tesla cars
Powered by renewable energy
Net zero energy factory

How Big Is The Gigafactory?



Dallas Cowboys
Stadium



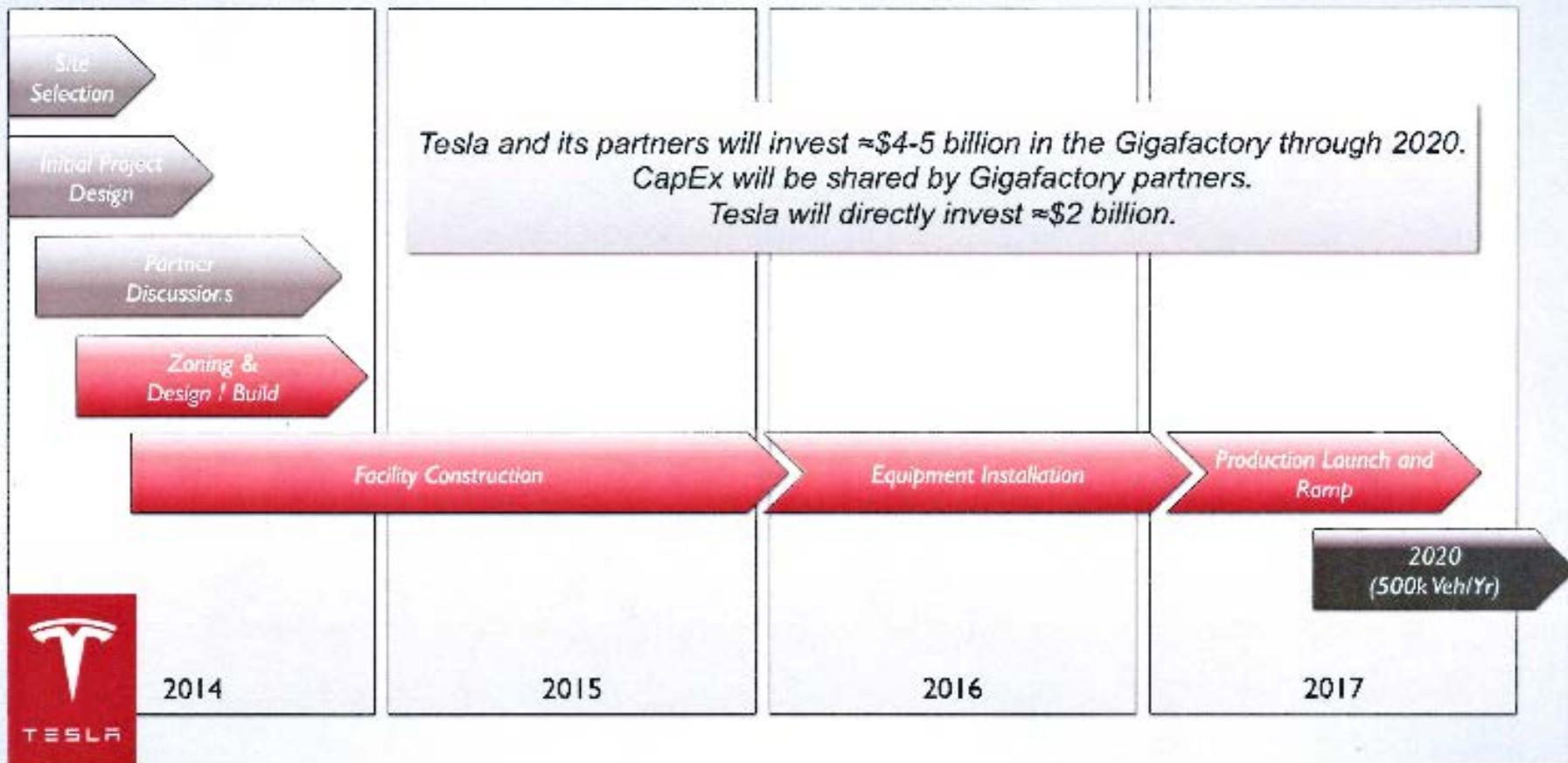
US Capitol



Banana

Boeing Factory (Largest Building on Campus)

Gigafactory Projected Timeline



980 Acres of Lithium-Ion Battery Production

- Facility construction currently taking place
 - 5-6 million square feet
- Equipment installation beginning 2016
- Battery production begins 2017
- Fully ramped up by 2020

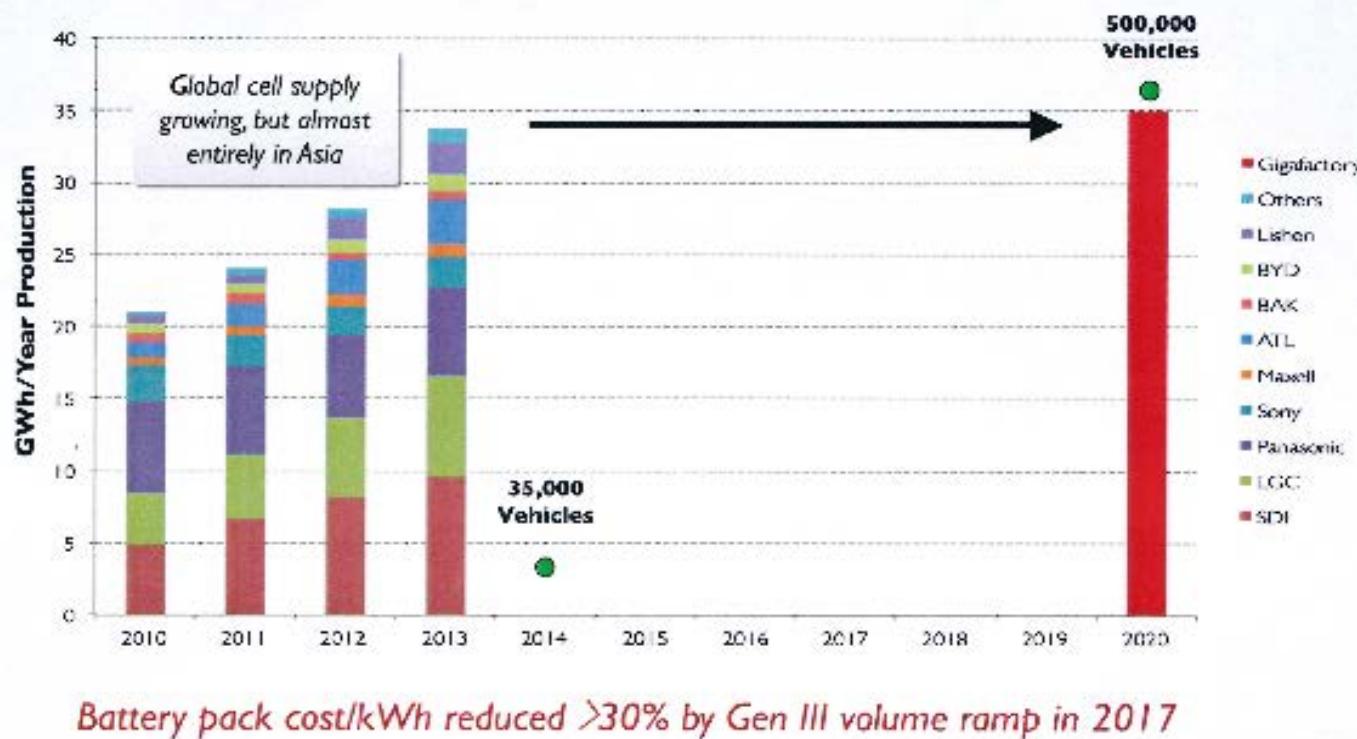


Expected Production

- 500,000 battery packs each year
 - Cutting battery pack costs by 30%
 - Allows for 2017 offering of mass-market electric car starting at \$35,000
 - Produced in Fremont, CA



Planned 2020 Gigafactory Production Exceeds 2013 Global Production



Other Points of Interest

- Right to purchase additional 9,000 acres, of which 7,000 acres for expected wind farm
 - Net-zero energy
- USA Parkway punch through to Hwy 50 expected complete by December 2017
 - \$70,000,000 construction paid by state

IMPACT: Construction

TESLA GIGAFACTORY CONSTRUCTION 2015-2017

| | Total | Annual Average |
|-------------------|------------------|----------------|
| Direct Jobs | 8,950 | 2,983 |
| Indirect Jobs | 4,665 | 1,555 |
| TOTAL JOBS | 13,615 | 4,538 |
| Economic Impact | \$ 1,600,000,000 | \$ 531,400,000 |

Source: GOED

CURRENT CONSTRUCTION EMPLOYMENT

| | 2013 | 2Q 2014 |
|--------------|---------------|---------------|
| Washoe | 10,552 | 11,167 |
| Lyon | 474 | 553 |
| Carson City | 873 | 987 |
| Douglas | 943 | 1,021 |
| Storey | 159 | 187 |
| TOTAL | 13,001 | 13,915 |

TESLA AS % OF TOTAL NW NEVADA **32.61%**

Peak Construction Employment (2006) 29,176

Source: Dept. of Employment, Training, Rehabilitation

IMPACT: Equipment Installation

TESLA GIGAFACTORY EQUIPMENT INSTALLATION 2015-2028

| | Total | Annual Average |
|-------------------|------------------|----------------|
| Direct Jobs | 12,015 | 858 |
| Indirect Jobs | 6,262 | 447 |
| TOTAL JOBS | 18,277 | 1,305 |
| Economic Impact | \$ 2,100,000,000 | \$ 152,900,000 |

Source: GOED



IMPACT: Equipment Installation

| TOTAL TAXABLE SALES (For Context) | | | |
|--------------------------------------|------------------------|------------------------|--------------|
| | 2013 | 2014 | % Change |
| Washoe | \$5,824,726,136 | \$6,370,684,534 | 9.37% |
| Lyon | \$305,525,152 | \$356,889,794 | 16.81% |
| Carson City | \$779,297,546 | \$804,368,288 | 3.22% |
| Douglas | \$592,823,014 | \$599,622,888 | 1.15% |
| Storey | \$77,728,883 | \$108,434,066 | 39.50% |
| TOTAL | \$7,580,100,731 | \$8,239,999,570 | 8.71% |
| TESLA AS % OF TOTAL NW NEVADA | | | 1.86% |

Source: Dept. of Taxation

IMPACT: Jobs

TESLA GIGAFACTORY JOBS IMPACT

| | National Multiplier | "Most Likely" |
|-----------------------|---------------------|---------------|
| Direct Jobs | 6,500 | 6,500 |
| Indirect Jobs | 22,685 | 16,965 |
| TOTAL JOBS | 29,185 | 23,465 |
| Employment Multiplier | 3.49 | 2.61 |

Source: GOED

NEVADA INPUT-OUTPUT MODEL (IMPLAN)

| | Job Multiplier | Direct Jobs |
|--|-----------------|-------------|
| Other basic organic chemical manufacturing | 4.46 | 617 |
| Aluminum Product manufacturing from purchased aluminum | 2.39 | 617 |
| Carbon and graphite product manufacturing | N/A (AZ 2.4543) | 617 |
| Storage battery manufacturing | N/A (AZ 2.5862) | 4,650 |



JOB IMPACTS BY INDUSTRY

| | Washoe | Lyon | Carson City |
|--|--------|------|-------------|
| Storage battery manufacturing | N/A | N/A | N/A |
| Aluminum Product manufacturing from purchased aluminum | N/A | N/A | N/A |
| Other basic organic chemical manufacturing | N/A | N/A | N/A |
| Carbon and graphite product manufacturing | N/A | N/A | N/A |
| Wholesale trade businesses | 1.06 | 0.50 | 0.51 |
| Food services and drinking places | 0.92 | 0.72 | 1.00 |
| Real estate establishments | 1.22 | 1.02 | 1.00 |
| Services to buildings and dwellings | 1.40 | 0.62 | 0.90 |
| Employment services | 1.16 | na | 0.74 |
| Management of companies and enterprises | 0.94 | 0.25 | 1.02 |
| Transport by truck | 1.38 | 1.34 | 0.33 |
| Offices of professional health practitioners | 1.07 | 0.63 | 1.41 |
| Securities, commodity contracts, investments, financial services | na | 0.04 | na |
| Retail stores-General | 1.13 | na | 1.54 |
| Private hospitals | 0.81 | na | 1.65 |
| Maintenance and repair construction of nonresidential structure | 1.18 | 0.93 | 0.87 |
| Retail stores-Food and beverage | 0.77 | 1.11 | 0.85 |
| Architectural, engineering, and related services | 1.22 | 1.37 | 0.56 |
| Accounting, tax, bookkeeping | 1.26 | 0.68 | 1.06 |
| Retail stores - Motor vehicle | 1.01 | 0.67 | 2.15 |
| Management, scientific, and consulting services | 0.45 | 0.13 | 0.29 |
| Automotive Repair | 4.65 | 0.90 | 1.67 |
| Monetary authorities and depository credit intermediation | 0.74 | 0.53 | 0.65 |
| Retail nonstores-Direct and electronic sales | 1.21 | na | 0.94 |

Lower share of employment vs nation

Higher share of employment vs nation

IMPACT: Residential Construction

NEW RESIDENTIAL CONSTRUCTION PER NEW JOB (WASHOE)

| YEAR | New Single-Family Units | Total New Residential | | New Single-Family Homes per New Job | | New Residential Units per New Job |
|------|-------------------------|-----------------------|----------|-------------------------------------|------|-----------------------------------|
| | | Units | New Jobs | Job | | |
| 2010 | 396 | 408 | (1,152) | (0.34) | | (0.35) |
| 2011 | 495 | 502 | (708) | (0.70) | | (0.71) |
| 2012 | 633 | 641 | 1,143 | 0.55 | | 0.56 |
| 2013 | 934 | 937 | 2,499 | 0.37 | | 0.37 |
| 2014 | 1,211 | 1,279 | 5,597 | 0.22 | | 0.23 |
| | | 1991-2014 Average | | 0.74 | 0.82 | |
| | | 1991-1998 Average | | 0.48 | 0.51 | |

Source: Dept. of Employment, Training, Rehabilitation

IMPACT: Job/Residence Projections

EMPLOYMENT PROJECTIONS-ALL EMPLOYMENT FOR RENO/SPARKS MSA

| Year | TESLA Direct | TESLA Indirect | EDAWN Primary | EDAWN Secondary | TOTALS | Adjustment for Attrition |
|---------------|--------------|----------------|---------------|-----------------|---------------|--------------------------|
| 2015 | 700 | 1,148 | 4,000 | 5,040 | 10,888 | 10,538 |
| 2016 | 1,000 | 1,640 | 3,500 | 4,410 | 10,550 | 10,201 |
| 2017 | 3,000 | 4,920 | 3,000 | 3,780 | 14,700 | 14,352 |
| 2018 | 1,800 | 2,952 | 2,500 | 3,150 | 10,402 | 10,055 |
| 2019 | 0 | 0 | 2,000 | 2,520 | 4,520 | 4,174 |
| TOTALS | 6,500 | 10,660 | 15,000 | 18,900 | 51,060 | 49,320 |

Source: EDAWN



IMPACT: Job/Residence Projections

NEW HOUSING UNIT DEMAND

| Year | Low Estimate | High Estimate |
|------------------------|---------------|---------------|
| 2015 | 5,269 | 8,430 |
| 2016 | 5,101 | 8,161 |
| 2017 | 7,176 | 11,482 |
| 2018 | 5,028 | 8,044 |
| 2019 | 2,087 | 3,339 |
| Five-Year Total | 24,661 | 39,456 |

Source: Center for Regional Studies

Approved Unbuilt Residential Units In Washoe County

29,849

Approved Unbuilt Single-Family Units Hwy 50 Corridor

15,668



IMPACT: Business SQFT Demand

| NEW COMMERCIAL SQFT DEMAND | | |
|----------------------------|------------------|-------------------|
| Year | Low Estimate | High Estimate |
| 2015 | 1,972,795 | 2,679,018 |
| 2016 | 1,909,706 | 2,593,344 |
| 2017 | 2,686,805 | 3,648,630 |
| 2018 | 1,882,374 | 2,556,227 |
| 2019 | 781,405 | 1,061,133 |
| Five-Year Total | 9,233,085 | 12,538,352 |

Source: Center for Regional Studies

| NEW OFFICE SQFT DEMAND | | |
|------------------------|------------------|------------------|
| Year | Low Estimate | High Estimate |
| 2015 | 509,407 | 1,083,933 |
| 2016 | 493,117 | 1,049,269 |
| 2017 | 693,776 | 1,476,238 |
| 2018 | 486,059 | 1,034,251 |
| 2019 | 201,771 | 429,335 |
| Five-Year Total | 2,384,130 | 5,073,026 |

Source: Center for Regional Studies

| NEW INDUSTRIAL SQFT DEMAND | | |
|----------------------------|-------------------|-------------------|
| Year | Low Estimate | High Estimate |
| 2015 | 4,204,724 | 5,456,975 |
| 2016 | 4,070,259 | 5,282,464 |
| 2017 | 5,726,532 | 7,432,009 |
| 2018 | 4,012,004 | 5,206,860 |
| 2019 | 1,665,451 | 2,161,455 |
| Five-Year Total | 19,678,970 | 25,539,763 |

Source: Center for Regional Studies



IMPACT: Local Taxes

- Storey County likely receiving most of sales tax revenue
- When property tax abatement ends, all will go to Storey County



IMPACT: Population

- Of all Storey County Employees (2011)
 - 59% live in Washoe County
 - 15% live in Lyon County
 - 7 % live in Storey County
 - 4% live in Carson City
 - 4.6% live outside of the State
- Unlikely new residents will live in Storey County



IMPACT: Population

| County | Direct Impact | | Indirect Impact | |
|---------------|----------------------------|-------------------|-----------------|-------------------|
| | Estimated | | Estimated | |
| | Estimated New Residents | New Households | New Residents | New Households |
| Washoe | 4,214 | 1,566 | 21,023 | 7,815 |
| Lyon | 1,039 | 386 | 5,184 | 1,927 |
| Storey | - | - | - | - |
| Carson City | 294 | 109 | 1,464 | 544 |
| Mineral | 206 | 77 | 1,027 | 382 |
| Douglas | 196 | 73 | 976 | 363 |
| Other Nevada | 374 | 139 | 1,868 | 695 |
| Totals | 6,323 | 2,350 | 31,542 | 11,726 |



IMPACT: Job Growth

- By 2019, 25,000 more jobs than at employment peak in 2007
- Unemployment Rates (Dec 2014)
 - Natural Unemployment Rate – 4%
 - U.S. Unemployment Rate – 5.6%
 - Nevada Unemployment Rate- 6.8%
 - Reno/Sparks MSA Unemployment Rate – 6.2%
- Lowest Unemployment Rate for 6 county NW Nevada Region – 2.7% (October 1999)

IMPACT: Job Growth

- 6 County NW Nevada region (Dec 2014)
 - 19,900 unemployed
 - 8,000 unemployable
 - 11,900 remaining
- Reno/Sparks MSA (Dec 2014)
 - 13,800 unemployed
- 45,000 + new jobs to fill



IMPACT: Residential Growth and Demographic Change

NORTHERN NEVADA 2000-2005

- Added 63,000 residents
- Ages 65 and older grew 69%
- Ages under 65 grew by 23%
- 11% of households 65 and older with no children at home (up from 7.7% in 2000)
- Increased demand for health care

NORTHERN NEVADA 2015-2020

- Projected addition of 38,000 due in part to Tesla, likely more.
- Primarily younger to middle-aged adults
- More school-aged children
- Increased demand for parks and recreation, other public services and SKILLED LABOR

IMPACT: Public Services

- From 2007 to 2015 there have been significant decreases in public employees
 - Washoe County
 - 3,199 FTE to 2,546 FTE
 - 7.82 to 5.90 FTE per 1,000 residents
 - Reno
 - 1,883 FTE to 1,205 FTE
 - 8.89 to 5.20 FTE per 1,000 residents



IMPACT: Public Services

- NEEDS
 - Infrastructure/Capital Improvements - roads, water, sewer, expanded administrative offices, parks, schools, etc.
 - Residential Services – police, fire, judicial, parks, education, recreation, road maintenance, etc.
 - Commercial Services – business licenses, permitting, police, fire, judicial, road maintenance
- INCREASED EXPENDITURE DEMANDS

IMPACT: Schools

- Increase in student populations
 - Washoe County – 3570 students
 - Carson City – not given
 - Based on multiplier for Washoe ≈ 249 Students
- Tesla will contribute \$37.5 million to Education Gift Fund starting in 2018



IMPACT: Wages

- Average wage \$20.67
- Direct Tesla employees - \$27.35
- Indirect employees - \$25.16
 - Higher sales tax revenues expected
 - Competition for Tesla-related jobs
 - Competition for limited employee pool
 - Wages will increase
 - Increased demand for goods, services, housing
 - Assessed values should increase

IMPACT: So much...

- Questions?

- AJ Feuling
 - Carson City SD Director of Fiscal Services
 - afeuling@carson.k12.nv.us

