

# Elizabethtown-Fort Knox MSA Transformation Project: Measuring the Impact of the BlueOval SK Battery Park on the Elizabethtown Metro Area

Hardin County Chamber of Commerce Membership Briefing  
August 9, 2023



# Project Funded By:



The Land Store, Inc.  
Tim Aulbach



Elizabethtown-Fort Knox MSA Transformation Project:  
Measuring the Impact of the BlueOval SK Battery Park  
on the Elizabethtown Metro Area

**Elizabethtown-Fort Knox MSA Transformation Project:**  
 Measuring the Impact of the BlueOval SK Battery Park on the Elizabethtown Metro Area

| Project Components  | Project Methodology   |
|---|---|
| <p><b>Project Research</b></p> <ul style="list-style-type: none"> <li>MSA Baseline</li> <li>Peer MSA Analysis</li> <li><b>BOSK Plant Impact</b></li> <li>Overview – Competitive Communities</li> <li>Parkway Conversions/MSA Expansion</li> </ul> | <ul style="list-style-type: none"> <li>Online Research</li> <li>Dr. Paul Coomes, Ph. D. Collaboration</li> </ul>  |
| <p>“Boomtown” Analysis</p> <ul style="list-style-type: none"> <li>Georgetown, KY</li> <li>Meridian, ID</li> <li>Reno, NV</li> <li>Round Rock, TX</li> </ul>   | <ul style="list-style-type: none"> <li>Online Research</li> <li>Site Visits</li> </ul>  |
| <p>Key Stakeholder Engagement</p> <ul style="list-style-type: none"> <li>Pre-/Post-SWOT Analysis</li> <li>Online Surveys/Interviews</li> <li>Project Recommendations</li> </ul>   | <ul style="list-style-type: none"> <li>Pre-Project SWOT Conference</li> <li>Online Surveys (141 Sent/90 Returned)</li> <li>34 Individual Interviews</li> <li>Post-Project SWOT Compilation</li> </ul> |

**Disclaimer:**

*The information as presented is accurate as of the date of publication; however, like all data, going forward, it is subject to periodic changes in the business environment.*

*Significant backup data will be presented in the written report which will be released soon.*

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**Physical/Site Impact**

*BlueOval SK Battery Park represents the single largest new economic development project in Kentucky's history, and will be the 10<sup>th</sup> largest manufacturing site in the world in terms of square footage.*

| Rank      | Company Name                    | Location                     | Total Facility Footprint (Square Feet) | Description                  |
|-----------|---------------------------------|------------------------------|--|------------------------------|
| 1         | Volkswagen                      | Wolfsburg, Germany           | 69,965,417                             | Auto Assembly                |
| 2         | AVTOVAZ                         | Tolyatti, Russia             | 64,583,462                             | Auto Assembly                |
| 3         | Hyundai                         | Ulsan, South Korea           | 54,357,747                             | Auto Assembly                |
| 4         | Kia                             | Hwaseong, South Korea        | 35,585,487                             | Auto Assembly                |
| 4         | Kia                             | Yancheng, China              | 35,585,487                             | Auto Assembly                |
| 5         | Foxconn                         | Longhua, China               | 32,292,731                             | Electronics                  |
| 6         | Kia                             | West Point, GA               | 28,115,334                             | Auto Assembly                |
| 7         | Kia                             | Teplicka and Vahom, Slovakia | 17,792,743                             | Auto Assembly                |
| 8         | Kia                             | Seo-gu, China                | 12,809,053                             | Auto Assembly                |
| 9         | Tesla                           | Shanghai, China              | 9,309,544                              | Auto Assembly                |
| <b>10</b> | <b>BlueOval SK Battery Park</b> | <b>Hardin County, KY</b>     | <b>8,400,000</b>                       | <b>EV Electric Batteries</b> |

Sources: R List 4/7/23;

BlueOval SK Hardin County, KY town hall 4/4/23;



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**MSA Impact – Announced EV Electric Battery Manufacturing Site Projects**

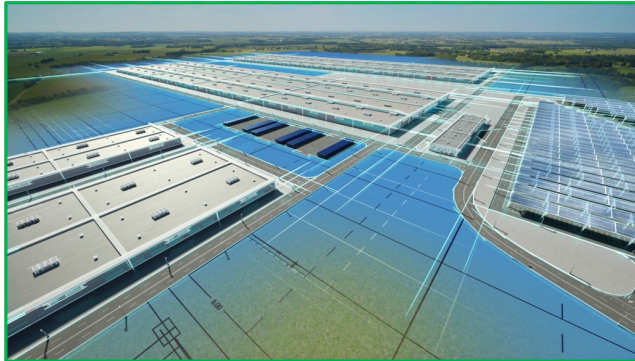
*As a stand-alone battery plant, BlueOval SK Battery Park will be the largest EV electric battery plant in the world in terms of investment, physical size, jobs created, and manufacturing capacity.*

| Rank | Company            | Location            | Investment (B) | Jobs  | GW Hour Capacity |
|------|--------------------|---------------------|----------------|-------|------------------|
| 1    | BlueOval SK        | Hardin County, KY   | \$5.8          | 5,000 | 86               |
| 2    | GM                 | Orion, MI           | 4.0            | 2,350 | N/A              |
| 3    | Panasonic          | DeSoto, KS          | 4.0            | 4,000 | 30               |
| 4    | GM/LG Energy       | Lansing, MI         | 2.6            | 1,700 | 50               |
| 5    | SK Innovation      | Commerce, GA        | 2.6            | 3,000 | 31               |
| 6    | Stellantis/Samsung | Kokomo, IN          | 2.5            | 1,400 | 33               |
| 7    | GM/LG Energy       | Spring Hill, TN     | 2.3            | 1,300 | 50               |
| 8    | Envision AESC      | Bowling Green, KY   | 2.0            | 2,000 | 30               |
| 9    | Ford               | Multiple Sites (MI) | 2.0            | 3,200 | N/A              |
| 10   | LG Energy          | Holland, MI         | 1.7            | 1,200 | N/A              |
| 11   | LG Energy          | Queen Creek, AZ     | 1.4            | TBA   | 11               |
| 12   | Toyota             | Liberty, NC         | 3.8            | 2,100 | N/A              |

BlueOval SK Tennessee battery plant will occupy 3.5 million square feet, employ 2,500 workers with 43 GW hour annual manufacturing capacity (Source: *Tennessee Town & City* 6/23)



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### Issues Raised with the BlueOval SK Executive Team

- **Construction phase: number of workers/payroll/local materials sourced**
  - **Equipment installation phase: number of workers/payroll**
  - **Full-time employment: number of workers/payroll/related issues**
  - **Supply chain issues: number of potential suppliers/location**
  - **Additional miscellaneous issues**
  - **Data confirmed March 16, 2023**
  - **Data reconfirmed May 29, 2023**
- 
- **Projections which follow are based in part on BOSK data**

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Source: WHAS-TV



Source: Business First of Louisville



Source: Google Image/BlueOval SK

## Construction Phase Estimates

- Local: Up to 720 workers
- Travelers: Up to 2,880 workers
- Peak (10/23): Up to 3,500 workers

## Housing Requirements:

- Traveling workers: 2,800 units
- Management personnel: 300 units

**Construction Payroll: \$1.6 billion**

**Local materials/services: \$75 million**

Sources: BlueOval SK/Barton Malow/Ford Land



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Source: Atlanta Journal-Constitution

Source: BlueOval SK

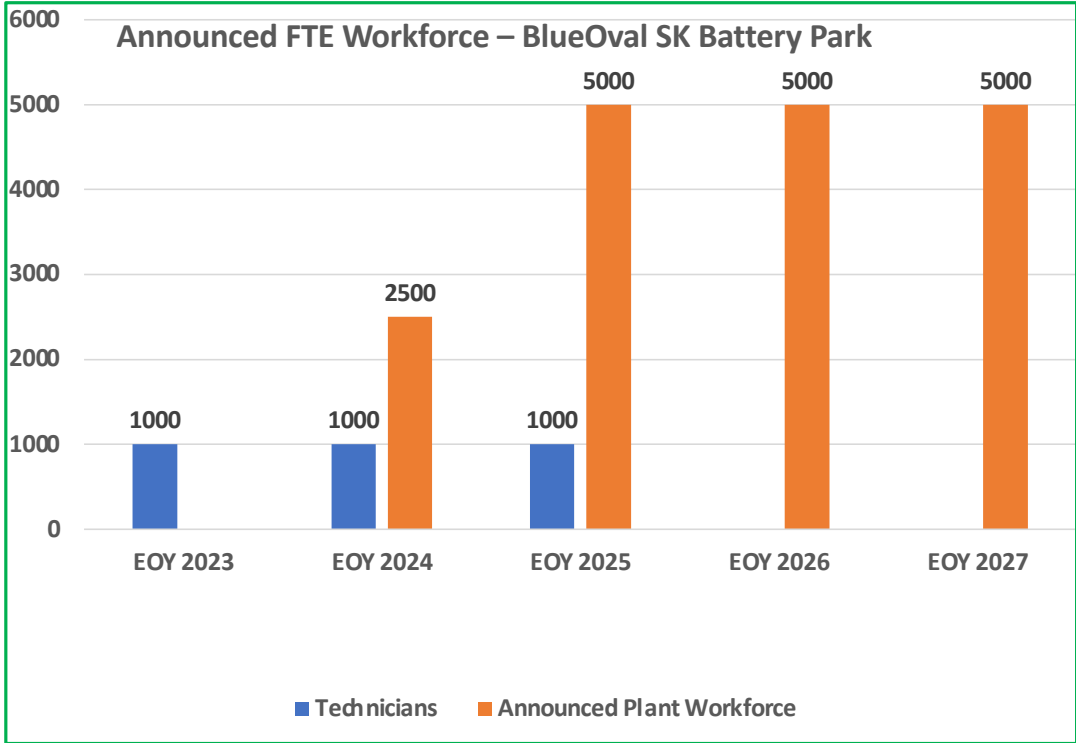
## Equipment Installation Estimates

- Q3 2023 – Q4 2025 (EOY)
- 500 – 1,000 South Korean technicians on site
- Technicians are temporary workers who are on a two-year visa; technicians will install, calibrate, and train BOSK workers on how to run and maintain the equipment
- Some technicians may shuttle to/from Tennessee
- Payroll: unknown and NOT included in \$1.6 B figure





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**Announced Workforce**

- EOY 23 workforce: 1,000 FTE
- EOY 24 workforce: 2,500 FTE
- EOY 25 workforce: 5,000 FTE
- EOY 26 workforce: 5,000 FTE
- EOY 27 workforce: 5,000 FTE
- BOSK plans to run two 12-hour shifts (patterns to be determined)

Source: BlueOval SK



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| Company                             | Number of Employees | Location             |
|-------------------------------------|---------------------|----------------------|
| Toyota Motor Manufacturing, KY      | 8,200               | Georgetown           |
| Ford Motor Co., Kentucky Truck      | 8,000               | Louisville           |
| Haier US Appliance Solutions, Inc.  | 6,000               | Louisville           |
| <b>BlueOval SK Battery Park</b>     | <b>5,000</b>        | <b>Hardin County</b> |
| Louisville Graphite, Inc.           | 5,000               | Louisville           |
| Ford Motor Co., Louisville Assembly | 4,000               | Louisville           |
| Metalsa Structural Products         | 2,000               | Elizabethtown        |
| Rev-A-Shelf, LLC                    | 2,000               | Louisville           |
| Bowling Green Metalforming, LLC     | 1,800               | Bowling Green        |
| Dart Container Corp. Of Kentucky    | 1,650               | Horse Cave           |

In terms of employment, by 2026, BOSK will be one of the five largest manufacturing sites in Kentucky based on current employment numbers and the announced BOSK employment number

Hardin County will be home to two of the 10 largest manufacturers in Kentucky

All but one of the Top-10 manufacturers are located along the I-65 Corridor

Source: IndustrySelect.com 10/5/22



**Elizabethtown-Fort Knox MSA Transformation Project:  
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**Projections – Compiled by Dr. Paul Coomes, Ph.D.**

**Key Assumptions used in Modeling Projections:**

- 1. Battery plant construction period: 2022 through 2024; investment of \$5.8 billion with average of 4,500 construction jobs over three years with average annual pay of \$50,000**
- 2. Plant will begin battery production by EOY 2024 with 2,500 full time employees; EOY 2025 with 5,000 full time employees with average annual pay of \$53,000; with fringe benefits: \$73,000\***
- 3. Battery plant will attract several new supplier/support businesses to Hardin County**

Source: Custom regional input-output models were built for Hardin County, the Elizabethtown – Fort Knox MSA, and the 10-county Elizabethtown region which provides significant information over 500 industries on such things as local employment, pay, etc. This is the standard method used by regional economists to analyze potential multiplier effects of new developments. In addition, modeling based on Tesla’s “real-world” experience to date in Reno was also factored in.

\* Projected average annual pay figure was generated by Dr. Coomes based on data provided by BOSK.



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Once BOSK reaches full employment, workers will be subject to a 1% Hardin County Occupational Tax. Tax proceeds collected over the first 10 years will be rebated to BOSK. Initial annual Occupational Tax proceeds, based upon the \$265 million annual payroll will total \$2.65 million. First 10 years, assuming no wage increase, proceeds will total \$26.5 million.

Source: Dr. Paul Coomes, Ph.D.

### Key Findings to Date:

- Each billion dollars of construction expenditures will support around 11,600 total job years in the region
- Each billion dollars of equipment expenditures will support around 823 total job-years in the region
- This plant will support 8,016 total jobs in the region; this represents an employment multiplier of 1.603
  - Incremental supply chain development: 1,397 jobs
  - Incremental household spending development: 1,619 jobs
- By EOY 2026, expected direct plant payroll: \$265 million
  - \$265 million
  - \$363 million (including fringe benefits)
  - 2026 – 2035 expected direct payroll impact: \$2.65 billion
  - 2026 – 2035 expected direct payroll (including FB): \$ 3.63 billion



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**Community Impact**

**BOSK will catalyze regional growth in employment, population, housing, schools, etc.**

- **Will BOSK suppliers move to Hardin County?**
- **What will remaining acreage on BOSK site be used for?**
- **Will local governments work to accommodate growth?**
- **Will Hardin County absorb the bulk of new workers, residents?**
- **How many jobs will be filled by workers moving to the area?**
- **Will the pay scale at BOSK draw workers from existing manufacturers?**
- **What will be needed in terms of new housing, schools, etc.?**

*Projections which follow, in part, use Georgetown/Scott County and Reno/Washoe County and their respective boomtown growth as a guide*



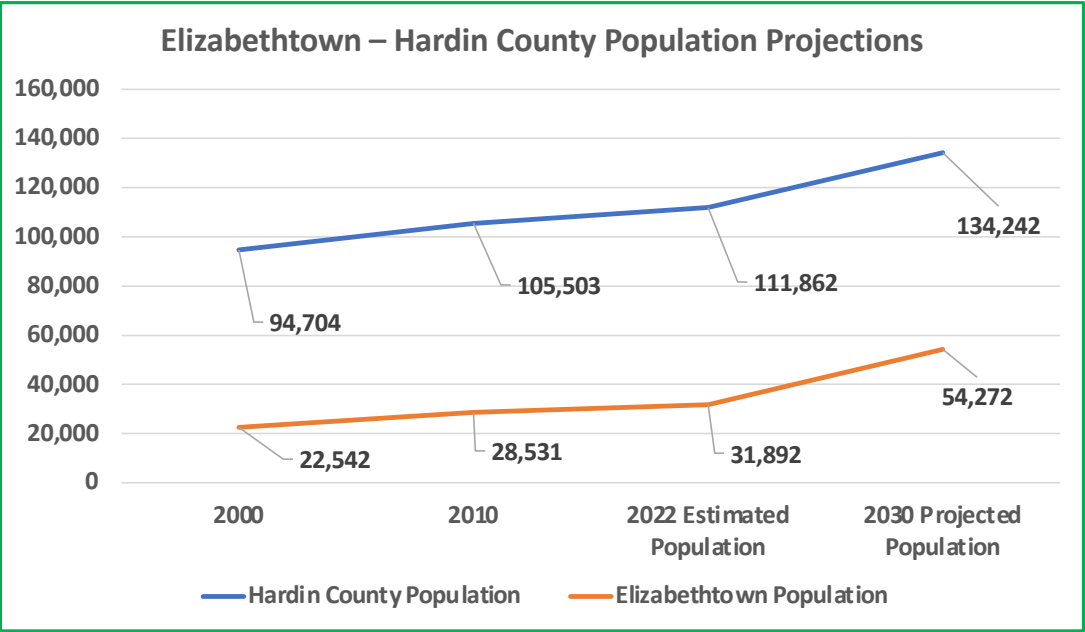
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| <b>Scott County Job and Population Growth</b> |             |             |             |             |             |                            |                    |
|---|-------------|-------------|-------------|-------------|-------------|----------------------------|--------------------|
|   | <b>1980</b> | <b>1990</b> | <b>2000</b> | <b>2010</b> | <b>2020</b> | <b>Growth 1980 to 2020</b> | <b>Growth rate</b> |
| Manufacturing jobs                            | 2,616       | 5,089       | 11,401      | 7,994       | 10,579      | 7,963                      | 304.4%             |
| All wage and salary jobs                      | 7,079       | 11,997      | 24,418      | 22,724      | 28,932      | 21,853                     | 308.7%             |
| Population                                    | 21,834      | 23,943      | 33,422      | 47,271      | 58,470      | 36,636                     | 167.8%             |

Source: US Bureau of Economic Analysis. Jobs are on a place of work basis, not place of residence. Population estimates are as of July 1; whereas decennial census estimates area as of April 1.

*Scott County population growth factor of 4.6 serves as the guide for population growth in Hardin County*

## Elizabethtown-Fort Knox MSA Transformation Project: Measuring the Impact of the BlueOval SK Battery Park on the Elizabethtown Metro Area



Source: Dr. Paul Coomes, Ph.D.

### Population Projection

- **Hardin County: + 22,380 people**
- **Hardin County will remain the sixth largest county and Elizabethtown could become the fifth largest city in Kentucky**
- **Age Breakout**
  - **Under age 5** **1,424**
  - **Ages 5 – 14** **3,128**
  - **Ages 15 – 24** **2,924**
  - **Ages 25 – 34** **2,956**
  - **All Others** **11,949**



## Elizabethtown-Fort Knox MSA Transformation Project: Measuring the Impact of the BlueOval SK Battery Park on the Elizabethtown Metro Area

| Scott County Housing Characteristics   |              |              |               |               |               |               |
|--|--------------|--------------|---------------|---------------|---------------|---------------|
|  | 1980         | 1990         | 2000          | 2010          | ACS 2016-2020 | 2020          |
| Total population                       | 21,813       | 23,867       | 33,061        | 47,173        | 55,961        | 57,155        |
| Household population                   | 20,817       | 22,866       | 31,593        | 45,857        | 54,648        | 56,054        |
| In group quarters                      | 996          | 1,001        | 1,468         | 1,316         | 1,313         | 1,101         |
| <b>Total housing units</b>             | <b>7,782</b> | <b>9,173</b> | <b>12,977</b> | <b>19,303</b> | <b>22,535</b> | <b>22,795</b> |
| Occupied housing units (households)    | 7,268        | 8,501        | 12,110        | 17,408        | 21,186        | 21,371        |
| Owner-occupied housing units           | 4,878        | 5,628        | 8,450         | 12,336        | 15,326        |               |
| Renter-occupied housing units          | 2,390        | 2,873        | 3,660         | 5,072         | 5,358         |               |
| Vacant units                           | 514          | 672          | 867           | 1,895         | 1,349         | 1,424         |
| Share of occupied units owner-occupied | 67.1%        | 66.2%        | 69.8%         | 70.9%         | 72.3%         |               |
| Overall vacancy rate                   | 6.6%         | 7.3%         | 6.7%          | 9.8%          | 6.0%          | 6.2%          |
| Persons per household                  | 2.86         | 2.69         | 2.61          | 2.63          | 2.58          | 2.62          |
| Median value, owner-occupied units *   | \$44,000     | \$68,200     | \$107,900     |               | \$197,900     |               |
| Median rent, renter-occupied units *   | \$195        | \$270        | \$513         |               | \$934         |               |

Source: US Census Bureau, decennial census results, plus the American Community Survey 5-year average for 2016-2020. Beginning with the 2010 decennial census, only a few housing questions were included. Detailed housing characteristics are now only available from the ACS each year.

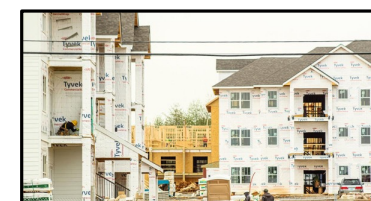
\* For decennial census years, the valuations refer to the prior year, e.g., 1980 Census refers to home values in 1979.

### Housing Projection

- Based on the population projection, we expect that there will be a need for 8,811 new housing units in Hardin County



Source: Dr. Paul Coomes, Ph.D.





## Elizabethtown-Fort Knox MSA Transformation Project: Measuring the Impact of the BlueOval SK Battery Park on the Elizabethtown Metro Area

| Summary of School Attendance Relative to Population and Jobs |        |        |        |        |        |                           |        |
|--|--------|--------|--------|--------|--------|---------------------------|--------|
| Scott County, KY   |        |        |        |        |        |                           |        |
|  | 1988   | 1990   | 2000   | 2010   | 2020   | Growth<br>1988 to<br>2020 | rate   |
| Schools: average daily attendance                            | 3,852  | 4,173  | 5,066  | 7,175  | 8,331  | 4,479                     | 116.3% |
| County population  | 22,852 | 23,943 | 33,422 | 47,252 | 57,477 | 34,625                    | 151.5% |
| Wage and salary jobs in County                               | 9,358  | 11,997 | 24,418 | 22,724 | 28,875 | 19,517                    | 208.6% |
| Students per 1,000 residents                                 | 169    | 174    | 152    | 152    | 145    | -24                       | -14.0% |
| Students per 1,000 wage and salary jobs                      | 412    | 348    | 207    | 316    | 289    | -123                      | -29.9% |

Sources: school attendance from Kentucky Department of Education; population and jobs from US Bureau of Economic Analysis.

### School Enrollment Increase Projection

- Based on the population projection, we expect 3,901 new K-12 students in Hardin County.

Source: Dr. Paul Coomes, Ph.D.

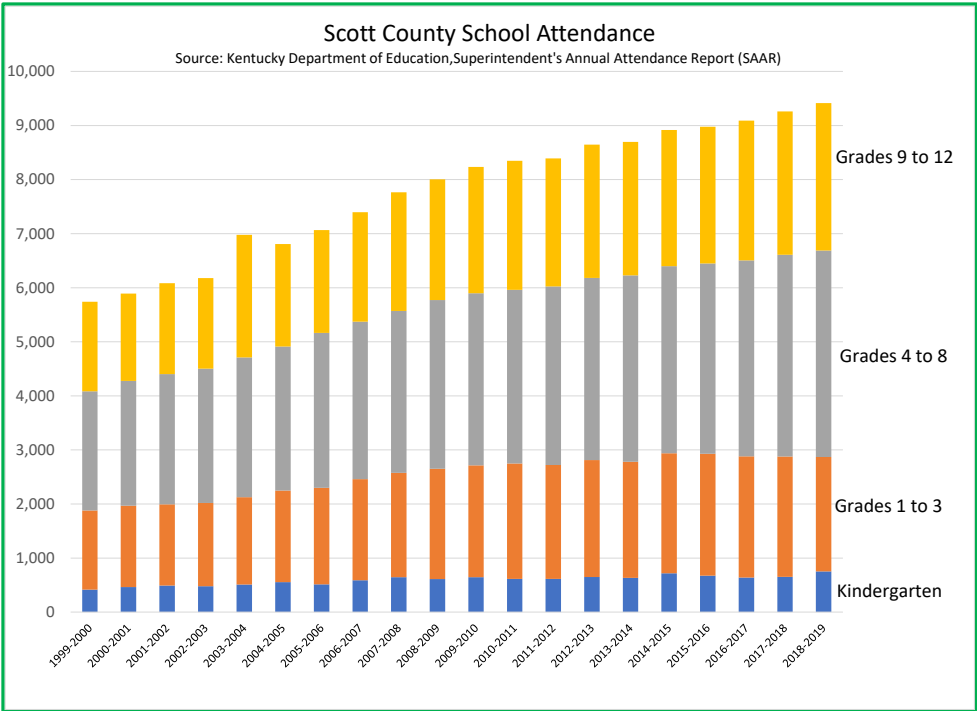


**Growth in Scott County Schools did not 100% mirror the growth in jobs until the second decade of Toyota's continuing job ramp-up**

**Hardin County's growth in school enrollment is expected to occur much faster, given the higher number of new jobs/anticipated personnel relocation from the start**



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### Population Projection

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  - **Age Breakout**

|                |               |
|----------------|---------------|
| • Under age 5  | <b>1,424</b>  |
| • Ages 5 – 14  | <b>3,128</b>  |
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| • All Others   | <b>11,949</b> |

Source: Dr. Paul Coomes, Ph.D.



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Source: News-Enterprise



Source: CMTA



Source: News-Enterprise

## Healthcare Sector Projection

Using Ada County, Idaho’s growth rates as a guide, we expect that the following will be needed in Hardin County:

- 75 new hospital beds
- 389 new hospital jobs
- 380 new ambulatory care jobs

Source: Dr. Paul Coomes, Ph.D.



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**Summary**

| <b>Category</b>  | <b>5,000<br/>New Jobs</b> |
|--|---------------------------|
| <b>Hardin County Projected Population Growth</b>               | <b>22,380</b>             |
| <b>Elizabethtown Projected Population Growth</b>               | <b>22,380</b>             |
| <b>Hardin County Projected New Housing Units</b>               | <b>8,811</b>              |
| <b>Hardin County Projected K – 12 School Enrollment Growth</b> | <b>3,901</b>              |
| <b>Hardin County Projected New Hospital Beds Needed</b>        | <b>75</b>                 |
| <b>Hardin County Projected New Hospital Jobs Growth</b>        | <b>389</b>                |
| <b>Hardin County Projected New Ambulatory Jobs Growth</b>      | <b>380</b>                |



**Elizabethtown-Fort Knox MSA Transformation Project:**  
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*Thank You!*

