The Future of Tipton Airport in Anne Arundel County

Analysis for Tipton Airport Authority
Anne Arundel County, Maryland

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Agenda

- Questions addressed
- Master Plan Projections vs Reality
- What changed?
- General Aviation Outlook
- Revised Projections
- Tipton & Competing Airports
- Implications for the Future
Questions addressed

- With expansion of runway, what is the feasibility of expanding services at the airport?
- What are the factors that will help increase air traffic?
Projections vs Reality
The Master Plan projected based aircraft to grow from 115 in 2007 to 215 (2007) and aircraft operations to increase from 49,225 in 2007 to 92,020 (2027), an increase of 87%. In reality, aircraft decreased by 17% in 2008 and aircraft operations remained around 49,225 from 2007 to 2012.
What Changed?

- Forecasting done in 2008 prior to the national economic recession
- General aviation activity was affected by increase fuel prices, public anxiety, increased security procedures at airports, and tighter regulation of air space
Future Trends in General Aviation
Where is General Aviation headed?

- 37% Decrease in gasoline prices since 2012
- Increase of 65% in student pilots 2009 - 2010 because of federal reg. changes
- Active GA fleet and operations projected to increase at an average annual rate of 0.2% through 2036
- GA hours flown projected to increase by an average of 1.2% per year through 2036 with changes in aircraft mix

Source: Federal Aviation Administration, “Aviation Forecast”, 2016
Maryland System Airports

141 Airports in the State
36 GA Public Use

Maryland System Airports
NPIAS Category
- Primary Commercial
- Reliever
- General Aviation
- Non-NPIAS

Source: Maryland System Plan, 2008
General Aviation Trends in Maryland

- Airports categorized into Air Carrier, Reliever, GA, Local, Special Facility
- As of 2015, the total aircraft operations was 1,05,861, of which Tipton’s share was 5%
- With 0.2% average annual growth rate the total operations in Maryland will increase to 1,068,482 by 2040

Source: Federal Aviation Administration
Forecast for Aviation Activity at Tipton Airport
Revised Projections

Projections based on:
1) Straight-line projection
2) 0.2% Avg. growth rate as forecasted by FAA
3) 25% Additional growth over 0.2% based on improvements
4) Population and employment-based projections
Aircraft Operations are forecast to increase to 102,024 by 2040 (based on 2001 – 2015 trends)

Tipton Master Plan projected aircraft operations to grow from 49,225 in 2007 to 92,020 in 2027 (very high)

![Forecast for Aircraft Operations at Tipton Airport based on Historical data](image)
2) Projection based on FAA Forecast

- Aircraft Operations are forecast to increase by an annual average growth of 0.2%
- Operations projected to grow from 47,922 in 2015 to 50,376
3) Projections of +25% Increase over 0.2% p.a.

- Aircraft Operations to increase with an additional of 25% average growth over 0.2% with expansion of runway and improvements in airport services.
4) Projections based on Population and Employment

- Forecast for population and employment from 2015 to 2040 prepared by the Maryland Department of Planning
- Aircraft Operations projected to increase by 14-17% from 2015 to 2040

<table>
<thead>
<tr>
<th>Year</th>
<th>Population</th>
<th>Growth</th>
<th>Operations based on Population</th>
</tr>
</thead>
<tbody>
<tr>
<td>2015</td>
<td>6,010,150</td>
<td>NA</td>
<td>47,922</td>
</tr>
<tr>
<td>2020</td>
<td>6,224,550</td>
<td>4%</td>
<td>49,632</td>
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<tr>
<td>2030</td>
<td>6,612,200</td>
<td>3%</td>
<td>52,722</td>
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<tr>
<td>2040</td>
<td>6,889,700</td>
<td>2%</td>
<td>54,935</td>
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</table>

Source: Maryland Department of Planning

<table>
<thead>
<tr>
<th>Year</th>
<th>Employment</th>
<th>Growth</th>
<th>Operations based on Employment</th>
</tr>
</thead>
<tbody>
<tr>
<td>2015</td>
<td>3,552,200</td>
<td>NA</td>
<td>47,922</td>
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<tr>
<td>2020</td>
<td>3,755,200</td>
<td>6%</td>
<td>50,661</td>
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<tr>
<td>2030</td>
<td>3,974,200</td>
<td>2%</td>
<td>53,615</td>
</tr>
<tr>
<td>2040</td>
<td>4,161,000</td>
<td>2%</td>
<td>56,135</td>
</tr>
</tbody>
</table>

Source: Maryland Department of Planning
Competitive Airports in Maryland
Competing Airports in Maryland

Five airports were identified as analogous to Tipton airport:
- Frederick Municipal Airport
- Lee Airport
- Martin State Airport
- Carroll County Regional Airport
- Montgomery County Airpark

Source: Federal Aviation Administration
Tipton Airport Location

- Adjacent to major interstate and state routes
- Benefitted from its location after the terrorist attacks in 2001
- Serves the eastern-central Maryland area including North Anne Arundel County

Source: http://tiptonairport.org/airport-diagram/
Tipton Airport Services

- Fuel sales, tiedowns, minor airframe and power plant services, maintenance and storage, pilot supplies, air taxi/charter and FBO, flight training
- Pilot lounge, flight planning conference

| Aircraft based on the field | 106 |
| Single engine airplanes | 89 |
| Multi engine airplanes | 6 |
| Helicopters | 11 |
| Aircraft operations | Avg 130/day * |
| Local general aviation | 98% |
| Transient general aviation | 2% |
| Air Taxi | < 1% |
| Military | < 1% |
## Comparative Analysis of Competing Airports

<table>
<thead>
<tr>
<th>Airport</th>
<th>Ops/day</th>
<th>Based aircraft</th>
<th>Runway (feet)</th>
<th>Total ops 2016 (As reported by AOPA)</th>
<th>T-hangars</th>
<th>Conventional hangars</th>
</tr>
</thead>
<tbody>
<tr>
<td>Frederick Municipal Airport</td>
<td>260</td>
<td>189</td>
<td>5,219</td>
<td>94,901</td>
<td>125</td>
<td>3</td>
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<tr>
<td>Martin State Airport</td>
<td>229</td>
<td>240</td>
<td>6,997</td>
<td>73,766</td>
<td>190</td>
<td>14</td>
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<tr>
<td>Montgomery County Airpark</td>
<td>131</td>
<td>146</td>
<td>4,202</td>
<td>51,097</td>
<td>80</td>
<td>5</td>
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<tr>
<td>Tipton Airport</td>
<td>130</td>
<td>106</td>
<td>3,000</td>
<td>47,906</td>
<td>0</td>
<td>4</td>
</tr>
<tr>
<td>Carroll County Regional Airport</td>
<td>99</td>
<td>102</td>
<td>5,100</td>
<td>36,090</td>
<td>14</td>
<td>7</td>
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<tr>
<td>Lee Airport</td>
<td>43</td>
<td>82</td>
<td>2,500</td>
<td>15,528</td>
<td>44</td>
<td>0</td>
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## Comparative Analysis of Competing Airports

<table>
<thead>
<tr>
<th>Airport</th>
<th>Location Score</th>
<th>Services Score</th>
<th>Performance Score</th>
<th>Site Capacity</th>
</tr>
</thead>
<tbody>
<tr>
<td>Frederick Municipal Airport</td>
<td>3</td>
<td>1</td>
<td>1</td>
<td>No</td>
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<tr>
<td>Martin State Airport</td>
<td>2</td>
<td>1</td>
<td>1</td>
<td>No</td>
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<tr>
<td>Montgomery County Airpark</td>
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<td>No</td>
</tr>
<tr>
<td>Tipton Airport</td>
<td>1</td>
<td>3</td>
<td>3</td>
<td>Yes</td>
</tr>
<tr>
<td>Carroll County Regional Airport</td>
<td>3</td>
<td>3</td>
<td>2</td>
<td>No</td>
</tr>
<tr>
<td>Lee Airport</td>
<td>3</td>
<td>2</td>
<td>3</td>
<td>No</td>
</tr>
</tbody>
</table>

Note: Services and Performance scores derived from Maryland Aviation Administration, “Maryland Aviation System Plan - Technical Report”, 2008
Comparative Summary of Forecasts
Implications for Facility Planning
### Implications for Facility Planning

- **Tipton Master Plan 2010 projections:**
  - 215 aircrafts → 56 T-Hangars and 121,473 Sq. Ft. of conventional hangar storage

- **Current Projections (proportional):**
  - 139 aircrafts → 36 T-Hangars and 78,957 Sq. Ft. of conventional hangar storage

### Table:

<table>
<thead>
<tr>
<th>Year</th>
<th>0.2% Increase in Aircrafts Operations</th>
<th>25% Increase in Operations</th>
<th>Number of Based Aircrafts</th>
</tr>
</thead>
<tbody>
<tr>
<td>2020</td>
<td>48403</td>
<td>60504</td>
<td>134</td>
</tr>
<tr>
<td>2025</td>
<td>48889</td>
<td>61111</td>
<td>135</td>
</tr>
<tr>
<td>2030</td>
<td>49380</td>
<td>61725</td>
<td>137</td>
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<tr>
<td>2035</td>
<td>49876</td>
<td>62345</td>
<td>138</td>
</tr>
<tr>
<td>2040</td>
<td>50376</td>
<td>62971</td>
<td>139</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Year</th>
<th>Number of aircrafts</th>
<th>Number of Hangers</th>
<th>Conventional Hangar Space (Sq. Ft)</th>
</tr>
</thead>
<tbody>
<tr>
<td>2010 Master Plan</td>
<td>215 in 2027</td>
<td>56</td>
<td>121473</td>
</tr>
<tr>
<td>Revised Projection</td>
<td>139 in 2040</td>
<td>36</td>
<td>78957</td>
</tr>
</tbody>
</table>
Implications for the Future

1) Management
   - Customer Feedback Database
   - Database of clients and flights

2) Operational Services:
   - Repairs, sales & maintenance
   - Flying school
   - De-icing, covered storage, snow removal

3) Customer Services
   - Restaurants
   - Shuttle service

4) Construction:
   - New Terminal building
   - Fencing
   - Additional Hangars

5) Long-term Opportunities:
   - On-site commercial offices (Around 0.5m Sq. Ft.)
   - 5000 Ft. Runway
References and Sources

- Tipton Airport, Maryland, http://tiptonairport.org/
- Tipton Airport Authority, “Tipton Airport - Airport Master Plan”, 2010
- Tipton Airport Authority, “Tipton Airport Business/Development Plan”, 2012
- Federal Aviation Administration, “Terminal Area Forecast Summary - Fiscal Year 2015-2040”, 2015
- Federal Aviation Administration, “Aviation Forecast”, https://www.faa.gov/data_research/aviation/
- Maryland Aviation Administration, “Maryland Economic Impact of Airports - Final Report”, 2015
- Interviews with Jeff Wellman of Talbert and Bright, Airport Consultants to Tipton
- Interviews with Ashish Solanki, Planner, Maryland Aviation Authority
- Interviews with Michael Wassel, Manager, Tipton Airport; Eric Flemino, Board Chair, Airport Authority
- Interview with Prof. Paul Schoenfeld, UMD School of Engineering