Welcome!
Introductions

Please share…

• Your name

• Your organization/employer, if applicable

• The name of your high school and hometown
Meeting Agenda

I. Welcome | 15 minutes
   a. Introductions
   b. Overview of Agenda
   c. Discussion Ground Rules
   d. Questions about Microsoft Teams

II. Circle Back – Meeting 1 | 30 minutes
   a. Traffic Mitigation
   b. Explanation of the Queue
   c. Update: Growth Management in Other Jurisdictions
   d. Housing Need → School Need
   e. Indexed Growth: Population vs. Enrollment
   f. Shares of Students by Housing Type

III. Alternative Student Generation Rates | 70 minutes
   a. Review of SGR Calculation
   b. Current Rates and Uses
   c. Census-based Rates
   d. Location-based Rates
   e. Other Rates

IV. Preview of STAT Meeting #3 | 5 minutes
STAT Participant Ground Rules

1. Lean in. Lean out.

2. Listen to understand. Suspend your beliefs to hear someone else’s experience.

3. Speak for yourself, not a group, and use “I” statements.

4. Disagree with people without being disagreeable.
   • It's okay to disagree. We are not aiming to agree. You do not have to persuade each other.

5. We have a lot to cover every meeting, therefore:
   • Try not to repeat things that others have said, simply indicate your agreement with another person’s comments.
   • Stay on topic and be concise while still being a thoughtful, provocative and active participant.

6. You must have a microphone to talk.
STAT Observer Ground Rules

1. To stay on track with such a large group we ask that you do not participate directly in the STAT conversation, but rather observe and take notes.

2. Preferably, please submit comments or questions on the comment cards.
   - We will respond to you sometime after tonight’s meeting.
   - If applicable, we will share your comments with the STAT membership at the next meeting or share our responses to your questions.

3. Otherwise, feel free to catch us after the meeting to share your comments or ask your questions.
Navigating Microsoft Teams
Circle Back – Meeting 1
Traffic Mitigation

- Policy Area test with moratoria eliminated in 2003
- Reintroduced in 2007 with mitigation solutions
Traffic Mitigation

• Trip-based mitigation was based on a combination of the policy area’s arterial congestion and transit mobility levels

• Policy areas in the:
  • pink required that the applicant mitigate 100% of the trips generated
  • white triangles required mitigation of a portion of trips generated
  • green did not require any mitigation
Traffic Mitigation

• Mitigation options included:
  • establishing a trip reduction program under a binding Trip Mitigation Agreement
  • providing non-auto facilities, such as bus shelters, segments of bikeways or sidewalks, and other specified means to enhance walking, biking, and transit ridership
  • building or widening master-planned road segments in the policy area
  • buying one or more full-size, hybrid-electric Ride On buses and operating them for at least 12 years (each bus mitigates 30 trips)
Traffic Mitigation

• In 2012, the policy area test was revised to be fee-based:
  • If certain traffic conditions existed, the applicant would pay an additional 25% of the transportation impact tax
  • If certain transit conditions existed, the applicant would pay an additional 25% of the transportation impact tax

• This feature of the policy, which was similar to the school facility payments, was eliminated in 2016, with the fees built directly into the transportation impact tax
Update: Growth Management in Other Jurisdictions

- **Loudon County**
  - Overflow schools to relieve overcrowding in schools
  - School proffer range
    - $6,401.67 - $29,781.67 per unit depending on unit type

- **Arlington County**
  - the only Northern Virginia jurisdiction allowed to have a mandatory fee called a “linkage fee”
    - Supports affordable housing

- By the next meeting, we will look closer at school construction costs for each jurisdiction we studied.
Translating Housing Need to School Capacity Need

Housing Units Permitted, Forecasted, and Additional Needed

Source: Census Bureau (data includes the municipalities of Rockville and Gaithersburg)
Translating Housing Need to School Capacity Need

• 37,543 additional housing units through 2030

• Two **rough estimate** impact calculations:
  1. Recent Countywide Unit Shares/Countywide SGRs
  2. Recent Cluster Unit Shares/Regional SGRs

<table>
<thead>
<tr>
<th>Methodology</th>
<th>ES Estimate</th>
<th>MS Estimate</th>
<th>HS Estimate</th>
</tr>
</thead>
<tbody>
<tr>
<td>Countywide Splits</td>
<td>5,291</td>
<td>2,507</td>
<td>3,328</td>
</tr>
<tr>
<td>Regional Splits</td>
<td>5,122</td>
<td>2,428</td>
<td>3,186</td>
</tr>
<tr>
<td>Average</td>
<td>5,207</td>
<td>2,468</td>
<td>3,257</td>
</tr>
<tr>
<td>Schools</td>
<td>7 schools</td>
<td>2 schools</td>
<td>1+ school</td>
</tr>
</tbody>
</table>
Indexed Growth: Population vs. Enrollment


Source: Montgomery County Public Schools Enrollment; U.S. Census Bureau, Decennial U. S. Census, Population Estimate Program
Indexed Growth: Population vs. Enrollment


Source: Montgomery County Public Schools Enrollment; U.S. Census Bureau, Decennial U. S. Census, Population Estimate Program
Share of Students by Housing Type

- **K-12 Students**
  - Single Family Houses: 55%
  - Townhouses: 22%
  - Low-Rise Multi-Family Units: 22%
  - High-Rise Multi-Family Units: 14%

- **ES Students**
  - Single Family Houses: 52%
  - Townhouses: 23%
  - Low-Rise Multi-Family Units: 22%
  - High-Rise Multi-Family Units: 21%

- **MS Students**
  - Single Family Houses: 56%
  - Townhouses: 22%
  - Low-Rise Multi-Family Units: 22%
  - High-Rise Multi-Family Units: 18%

- **HS Students**
  - Single Family Houses: 58%
  - Townhouses: 22%
  - Low-Rise Multi-Family Units: 22%
  - High-Rise Multi-Family Units: 14%

- **Dwelling Units**
  - Single Family Houses: 47%
  - Townhouses: 22%
  - Low-Rise Multi-Family Units: 22%
  - High-Rise Multi-Family Units: 14%
School Queue

- Cluster areas were previously identified as one of three statuses:
  - Open (under 105% utilization)
  - Open but requiring School Facility Payments (105-120% utilization)
  - In moratorium (120% utilization and above)
- The status would be maintained for the full fiscal year.
- Desire to allow a cluster’s status to change mid-year.
- A staging ceiling was calculated to indicate how many projected students away a cluster was from entering the next status.
School Queue

- If a subdivision would cause a cluster to exceed the 120% threshold at any level, only the number of dwelling units that would reach the threshold would be allowed.

- Similarly, if a subdivision would cause a cluster to exceed the 105% threshold at any level, then the developer would be required to make the appropriate School Facility Payments for the number of dwelling units exceeding the threshold.

- Once a new status is triggered by any individual subdivision, the new status applies to all future application during the fiscal year.
School Queue

• We do not keep a running count or modify the staging ceiling with every approved application.

• Each application is reviewed against the original staging ceiling.
• Confusion in the policy document (Section S7.2):
  • “The Planning Board must determine whether adequate staging ceiling capacity is available for a project by subtracting the capacity required by projects with earlier queue dates from the remaining capacity…”
  • “If sufficient capacity is available for a project based on the queue date, the Planning Board must not deny an application based on pipeline (but not staging ceiling) changes while the queue date is in effect.”

• More review of queue options when we discuss the policy in depth in the new year.
Alternative Student Generation Rates
How are the SGRs Calculated?

- Planning receives enrollment data from MCPS
  - One record per student, with address and grade
- Map each address and join it to SDAT property database to identify:
  - Geographies (region of the county, cluster, school)
  - Type of dwelling (Single Family, Townhouse, MF Low, MF High)
- SDAT data requires a substantial amount of clean-up
- Process has improved with each attempt
How are the SGRs Calculated?

• For each geography and dwelling type combination:
  • Calculate total number of students by grade level
  • Calculate total unit count (regardless of students)
• Divide the total number of students by the total unit count
• Resulting ratio is the **average number of students generated in any given year by the particular dwelling type in the given geography**
Current Student Generation Rates

Student Generation Rates are an average of the number of students per type of dwelling unit.

### 2018 MCPS Student Generation Rates by Region and Housing Type

#### Countywide Student Generation Rates

<table>
<thead>
<tr>
<th>Housing Type</th>
<th>ES</th>
<th>MS</th>
<th>HS</th>
<th>K-12</th>
</tr>
</thead>
<tbody>
<tr>
<td>Single Family Detached</td>
<td>0.199</td>
<td>0.110</td>
<td>0.154</td>
<td>0.462</td>
</tr>
<tr>
<td>Single Family Attached</td>
<td>0.227</td>
<td>0.113</td>
<td>0.150</td>
<td>0.490</td>
</tr>
<tr>
<td>Multi-Family Low to Med Rise</td>
<td>0.197</td>
<td>0.086</td>
<td>0.109</td>
<td>0.393</td>
</tr>
<tr>
<td>Multi-Family High Rise</td>
<td>0.055</td>
<td>0.023</td>
<td>0.031</td>
<td>0.110</td>
</tr>
</tbody>
</table>

#### Regional Student Generation Rates

<table>
<thead>
<tr>
<th>Region</th>
<th>ES</th>
<th>MS</th>
<th>HS</th>
<th>K-12</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>East</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Blair, Einstein, Kennedy, Northwood, Wheaton, Blake, Paint Branch and Springbrook clusters</td>
<td>0.203</td>
<td>0.103</td>
<td>0.144</td>
<td>0.450</td>
</tr>
<tr>
<td>Single Family Detached</td>
<td>0.219</td>
<td>0.115</td>
<td>0.160</td>
<td>0.494</td>
</tr>
<tr>
<td>Single Family Attached</td>
<td>0.253</td>
<td>0.112</td>
<td>0.148</td>
<td>0.512</td>
</tr>
<tr>
<td>Multi-Family Low to Med Rise</td>
<td>0.088</td>
<td>0.036</td>
<td>0.047</td>
<td>0.171</td>
</tr>
<tr>
<td>Multi-Family High Rise</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Southwest</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Bethesda-Chevy Chase, Churchill, Walter Johnson, Richard Montgomery, Rockville, Whitman, and Woodson clusters</td>
<td>0.186</td>
<td>0.109</td>
<td>0.151</td>
<td>0.446</td>
</tr>
<tr>
<td>Single Family Detached</td>
<td>0.167</td>
<td>0.085</td>
<td>0.111</td>
<td>0.363</td>
</tr>
<tr>
<td>Single Family Attached</td>
<td>0.150</td>
<td>0.068</td>
<td>0.085</td>
<td>0.303</td>
</tr>
<tr>
<td>Multi-Family Low to Med Rise</td>
<td>0.041</td>
<td>0.018</td>
<td>0.025</td>
<td>0.084</td>
</tr>
<tr>
<td>Multi-Family High Rise</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Upcounty</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Clarksburg, Damascus, Gaithersburg, Magruder, Northwest, Poolesville, Quince Orchard, Seneca Valley, Shannondale, and Watkins Mill clusters</td>
<td>0.210</td>
<td>0.120</td>
<td>0.169</td>
<td>0.499</td>
</tr>
<tr>
<td>Single Family Detached</td>
<td>0.248</td>
<td>0.121</td>
<td>0.157</td>
<td>0.526</td>
</tr>
<tr>
<td>Single Family Attached</td>
<td>0.183</td>
<td>0.077</td>
<td>0.093</td>
<td>0.352</td>
</tr>
<tr>
<td>Multi-Family Low to Med Rise</td>
<td>0.020</td>
<td>0.008</td>
<td>0.010</td>
<td>0.038</td>
</tr>
<tr>
<td>Multi-Family High Rise</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Rates are calculated using Fall 2018 enrollment data from Montgomery County Public Schools. Of the nearly 163,000 students enrolled in MCPS schools in Fall 2018, Planning Staff were able to match 99.4% of the students to a housing type.
How are the SGRs Currently Used?

• Countywide, by grade level and unit type
  • Calculation of School Impact Tax rates
• Regional, by grade level and unit type
  • Estimation of the enrollment impacts of a sector plan
  • Estimation of the enrollment impacts of a development application
• Cluster, by grade level
  • Provided to MCPS for projection models
Important Note

• Don’t focus so much on the numbers
• Look at the relationships
Questions to Ask as we Review SGRs

• What do these data show? What relationships do they demonstrate?
• Are these relationships important?
• Should these be used? If so, how?
• Should we look at a variation of these? Is there a better way to operationalize the relationship?
Alternative SGRs: Census-Based Rates
Census Tracts

- small, relatively permanent geographic entities
- boundaries follow visible features
- designed to be homogeneous with respect to population characteristics, economic status, and living conditions
- optimum population size of 4,000 - generally ranges between 1,200 to 8,000+

Census* Based Rates – Geographic Unit

*2017 American Community Survey 5-year Estimates

Student Generation Rate by Census Tract, K-12
### Census Variable Correlations

<table>
<thead>
<tr>
<th>Variable</th>
<th>Correlation</th>
<th>Variable</th>
<th>Correlation</th>
<th>Variable</th>
<th>Correlation</th>
<th>Variable</th>
<th>Correlation</th>
</tr>
</thead>
<tbody>
<tr>
<td>MCPS Students: MF Low Units, ES</td>
<td>0.313</td>
<td>MCPS Students: MF Low Units, K-12 Population: Percent Black Non-Hispanic</td>
<td>-0.148</td>
<td>MCPS Students: MF High Units, K-12 Population: Percent Hispanic</td>
<td>0.281</td>
<td>SFD Units, HS</td>
<td>-0.134</td>
</tr>
<tr>
<td>MCPS Students: MF High Units, SFD</td>
<td>-0.460</td>
<td>SFD Units, K-12 Population: Percent Hispanic</td>
<td>0.555</td>
<td>SFD Units, ES</td>
<td>0.108</td>
<td>SGR: MF High Units, ES</td>
<td>-0.243</td>
</tr>
<tr>
<td>SGR: MF Low Units, HS</td>
<td>0.085</td>
<td>SGR: MF Low Units, ES</td>
<td>0.044</td>
<td>SGR: MF High Units, ES</td>
<td>0.111</td>
<td>SGR: MF Low Units, HS</td>
<td>0.482</td>
</tr>
<tr>
<td>SGR: MF High Units, K-12 Population: Percent White Non-Hispanic</td>
<td>0.463</td>
<td>SGR: MF Low Units, ES</td>
<td>0.110</td>
<td>SGR: MF High Units, K-12 Population: Percent Hispanic</td>
<td>0.227</td>
<td>SGR: MF Low Units, HS</td>
<td>0.395</td>
</tr>
<tr>
<td>Dwelling Units: SFD</td>
<td>-0.531</td>
<td>SGR: SFD Units, K12</td>
<td>0.108</td>
<td>SGR: SFD Units, ES</td>
<td>0.044</td>
<td>SGR: SFD Units, ES</td>
<td>0.175</td>
</tr>
<tr>
<td>SGR: SFD Units, K12</td>
<td>0.231</td>
<td>SGR: SFD Units, ES</td>
<td>0.110</td>
<td>SGR: SFD Units, ES</td>
<td>0.044</td>
<td>SGR: SFD Units, ES</td>
<td>0.105</td>
</tr>
</tbody>
</table>

**Legend:**
- Positive correlations are shaded in blue.
- Negative correlations are shaded in red.

**Note:** The image contains a heat map of variable correlations, with colors indicating the strength and direction of the correlation.
K-12 All Units SGR

- High positive correlation to:
  - % of Households with Children Under 18
  - % of Households that are Families
  - Average Family Size

- Positive correlation to:
  - % People of Color
  - % Hispanic
  - % Foreign Born
  - # and % of units SFD
  - # and % of units SFA

- Negative correlation to:
  - Population Density
  - Median Age
  - Median Family Income
  - % White non-Hispanic

- High negative correlation to:
  - # and % of units Multifamily High-rise

Student Generation Rate by Census Tract, K-12
Distribution of Census Tracts by:
% of Households w/Children Under 18

Count of Census Tracts

[Map of Census Tracts showing distribution by percentage of households with children under 18]
Student Generation Rate for Census Tracts by:
% of Households w/Children Under 18 & Housing Type

20% or less 20% - 30% 30% - 40% 40% - 50% More than 50%

All Housing Types  Single Family Houses  Townhouses  Low-Rise Multi-Family Units  High-Rise Multi-Family Units
Distribution of Census Tracts by:
% of K to 12 Students Enrolled in Public Schools
Student Generation Rate for Census Tracts by:
% of K to 12 Students Enrolled in Public Schools & Housing Type

![Bar Chart]

- 60% or less
- 60% - 70%
- 70% - 80%
- 80% - 90%
- More than 90%

All Housing Types
Single Family Houses
Townhouses
Low-Rise Multi-Family Units
High-Rise Multi-Family Units
Distribution of Census Tracts by: Median Age

Count of Census Tracts
Student Generation Rate for Census Tracts by:
Median Age and Housing Type

- 35 or less
- 35 - 40
- 40 - 45
- 45 - 50
- More than 50

Bar chart showing the student generation rate for different housing types and age ranges.
Distribution of Census Tracts by:
Median Household Income

Count of Census Tracts
Student Generation Rate for Census Tracts by:
Median Household Income and Housing Type

- $75K or less
- $75K - $125K
- $125K - $175K
- $175K - $225K
- More than $225K

Housing Types:
- All Housing Types
- Single Family Houses
- Townhouses
- Low-Rise Multi-Family Units
- High-Rise Multi-Family Units
Distribution of Census Tracts by: Median Family Income of Families w/Children Under 18
Student Generation Rate for Census Tracts by: **Median Family Income** (of Families w/Children U18) & **Housing Type**

- $75K or less
- $75K - $125K
- $125K - $175K
- $175K - $225K
- More than $225K
Distribution of Census Tracts by:
% White Population (Non-Hispanic)
Student Generation Rate for Census Tracts by: 
**% White Population (Non-Hispanic) and Housing Type**

- **All Housing Types**
- **Single Family Houses**
- **Townhouses**
- **Low-Rise Multi-Family Units**
- **High-Rise Multi-Family Units**

Bar chart showing the student generation rate for different housing types and white population ranges.
Distribution of Census Tracts by:
% People of Color (All Non-White)
Student Generation Rate of Census Tracts by: % People of Color and Housing Type

[Bar chart showing the distribution of student generation rates by housing type and percentage of people of color. The categories are: All Housing Types, Single Family Houses, Townhouses, Low-Rise Multi-Family Units, and High-Rise Multi-Family Units. The percentage ranges are: 20% or less, 20% - 40%, 40% - 60%, 60% - 80%, and More than 80%.]
Distribution of Census Tracts by:
% Black Population (Non-Hispanic)
Distribution of Census Tracts by:
% Hispanic Population
Student Generation Rate for Census Tracts by: % Hispanic Population and Housing Type
Distribution of Census Tracts by: % Foreign-Born Population
Student Generation Rate for Census Tracts by:
% Foreign-Born Population and Housing Type

- All Housing Types
- Single Family Houses
- Townhouses
- Low-Rise Multi-Family Units
- High-Rise Multi-Family Units

- 20% or less
- 20% - 30%
- 30% - 40%
- 40% - 50%
- More than 50%
Student Generation Rate for Census Tract by:
Demographic Characteristics and School Level

% White Population of Tract
- ES
- MS
- HS

% People of Color of Tract
- ES
- MS
- HS

% Foreign Born of Tract
- ES
- MS
- HS

Legend:
- 30% or less
- 30% - 40%
- 40% - 50%
- 50% - 60%
- 60% - 70%
- More than 70%
- 20% or less
- 20% - 30%
- 30% - 40%
- 40% - 50%
- 50% - 60%
- 60% - 70%
- More than 60%
- 20% or less
- 30% - 40%
- 40% - 50%
- 50% - 60%
- More than 50%
Distribution of Census Tracts by: Population Density

- Positively correlated to % of students in ES
- Negatively correlated to % of students in MS and HS
Student Generation Rate for Census Tracts by: Population Density and Housing Type

- All Housing Types
- Single Family Houses
- Townhouses
- Low-Rise Multi-Family Units
- High-Rise Multi-Family Units
Student Generation Rate for Census Tracts by: Population Density and School Level
Alternative SGRs: Location-Based Rates
Student Generation Rate by: Transportation Policy Area Categories
Student Generation Rate by: Transportation Policy Area Categories

![Graph showing student generation rate by transportation policy area categories. Each category is represented by different colors: Green, Orange, Red, and Yellow. The x-axis represents the categories (SFD, SFA, MFL, MFH, Tot), and the y-axis represents the rate ranging from 0.000 to 0.600.](image-url)
Student Generation Rate by: Distance to Metro Stations
Student Generation Rate by: Distance to Metro Stations
Student Generation Rate by: Inside/Outside the Beltway
Student Generation Rate by: Inside/Outside the Beltway

- SFD
- SFA
- MF Low
- MF High
- All

Legend:
- Inside Beltway
- Outside Beltway
Equity Emphasis Areas are defined by the Metropolitan Washington Area Council of Governments as Census tracts with higher than average concentration of low-income, minority populations, or both.
Student Generation Rate by:
Inside/Outside Equity Emphasis Areas

- SFD
- SFA
- MF Low
- MF High
- All

Legend:
- Inside Equity Emphasis Area
- Outside Equity Emphasis Area
Student Generation Rate by: Inside/Outside Priority Funding Areas

Priority Funding Areas are those identified by the county and certified by the state as designated smart growth areas eligible for state infrastructure funding. All areas inside the beltway and all municipalities are designated by law. Other areas eligible for designation include existing communities and areas where industrial or other economic development is desired. In addition, counties may designate areas planned for new residential communities which will be served by water and sewer systems and meet density standards.
Student Generation Rate by: Inside/Outside Priority Funding Areas
Alternative SGRs: Other Rates
Distribution of Census Tracts by: Average Length of Time Since Units were Last Sold

Source: SDAT
Student Generation Rate by:
Year Last Sold (Single Family Detached only)
Student Generation Rate by: Share of Affordable Housing

**Low-Income Housing Tax Credit (LIHTC)** - Administered by state housing finance agencies; provides funding for the development costs of low-income housing; rental units only. The building must remain in compliance and is subject to a covenant to enforce compliance for a minimum of 40 years (15-year compliance period and a 25-year extended use period).

**Project Based Section 8** - An owner reserves some or all of the units in a building for low-income tenants, in return for a federal government guarantee to make up the difference between the tenant's contribution and the rent amount in the owner's contract with the government.

Source: SDAT/DHCA
Student Generation Rate by:
Share of 3-Bedroom Units (Multifamily buildings only)

Source: SDAT/DHCA
Preview of STAT Meeting #3
STAT Meeting #3

• Scheduled for Tuesday, December 3 at 7:00 pm
  • Conflicts with Council Public Hearing on Bill 34-19

• Topics:
  • Circle back on items from today’s meeting
  • Continued review of alternative Student Generation Rates
  • Anything else?
Additional Alternative SGRs

• Policy Areas
• Distance to School
• Year Built
• Gross Floor Area (Single Family)
• Lot Size (Single Family)
• Others?