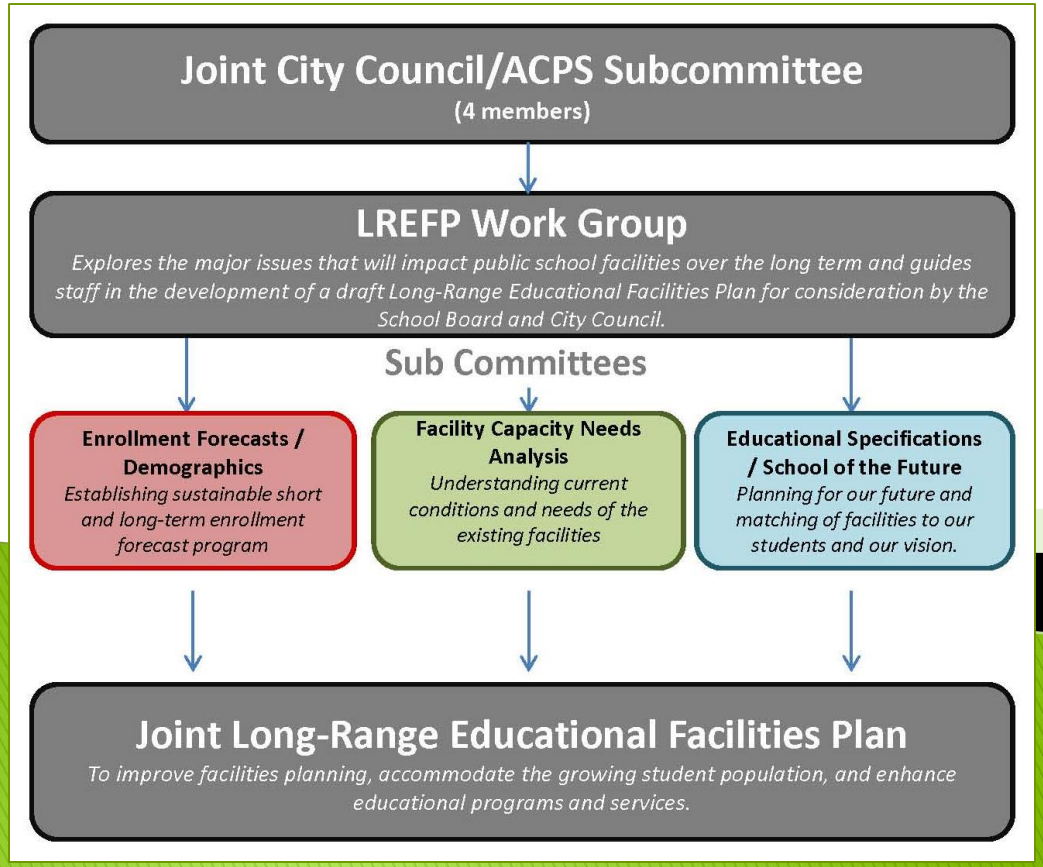
Facility Capacity Needs Analysis Subcommittee

ACPS & City of Alexandria

May 23, 2014



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Agenda

- Review Work Program
- Progress by Hughes Group Architects
  - Review Scope of Work for Exterior Site Inventory
- Review Capacity Methodology
- Next Steps

- Today's goal is to establish a recommended capacity methodology

Review Work Program

- Work Program Goals
  - Assess existing conditions
  - Review capacity analysis methodology
  - Review how existing capacity is allocated to meet demand
  - Establish guidelines for adding capacity, supporting education
  - Identify potential school site types

Review Work Program

- Work Program Approach
  - Develop a school facility and site inventory
  - Develop a capacity and utilization assessment for each school site
  - Identify space needs by type of use
  - Review findings of Enrollment Subcommittee and Educational Specifications Subcommitee
  - Reallocate existing capacity to meet current demand
  - Develop guidelines for adding capacity
  - Review potential future school sites

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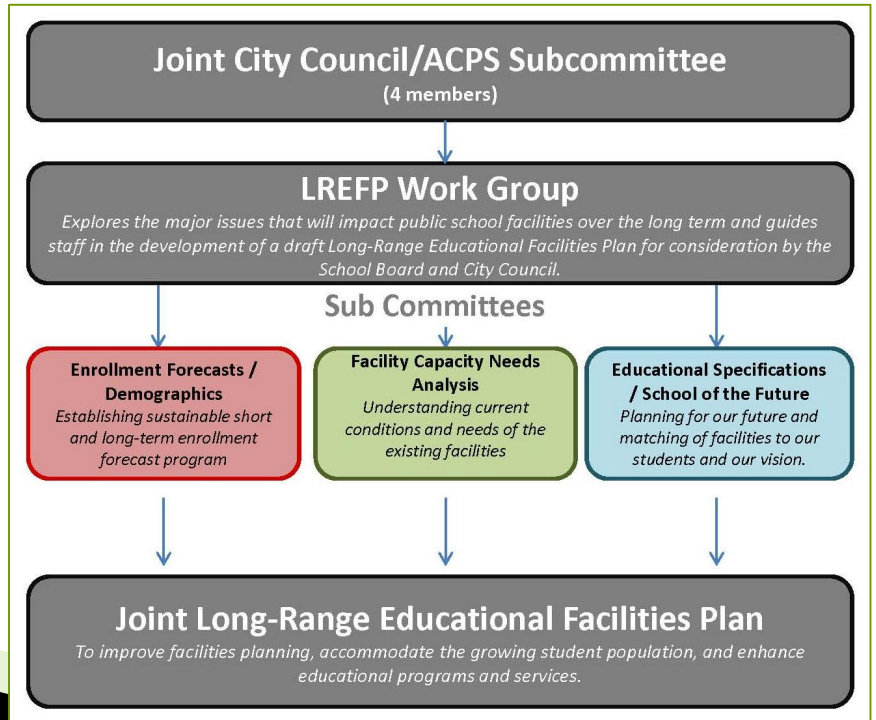
Review Work Program

- Next Steps
  - Assess existing conditions of school sites
  - Educational Adequacy Assessment
  - Compare existing conditions to educational specifications' benchmarks
  - FY 2015 funding



Review Work Program

- 1st meeting
  - Reviewed Work Program/ HGA Scope of Work
  - ACPS Elementary Standard Program/Room Allocations
  - Methodology for Elementary and Secondary Capacity Analysis
- 2nd meeting
  - Reviewed data collected on pilot school
  - Community uses of school facilities
- 3rd meeting
  - Review different types of capacity calculation methodologies

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Status on School Facility Inventory– Building Interiors

- Building Interiors
  - Site Visits 100% Complete
    - Charles Barrett, Cora Kelly, Douglas MacArthur, George Mason, George Washington, Francis Hammond, James Polk, John Adams, Lyles Crouch, Matthew Maury, T.C. Minnie Howard, Mt. Vernon, William Ramsay, Samuel Tucker, T.C. Williams King Street
  - Sites not included in the scope
    - Jefferson-Houston
    - Patrick Henry

Status on School Facility Inventory– Building Interiors

- Elementary* "Working Numbers"

Region	Average Age (Years)	# FSR	Average Media Center SF	Average Dining & Food Service SF	Average Gymnasium SF
Central	71	82	2,950	3,689	4,175
East	73	130	2,437	3,508	6,434
West	42	182	2,732	3,926	5,361
Total	61	394	2,684	3,709	5,428

**without Jefferson-Houston and Patrick Henry*
Central– C. Barrett, D. MacArthur, G. Mason
East– C. Kelly, L. Crouch, M. Maury, Mt Vernon, *Jefferson-Houston*
West– J.K. Polk, J. Adams, S. Tucker, W. Ramsay, *P. Henry*

Status on School Facility Inventory– Building Interiors

- Secondary "Working Numbers"

	Average Age (Years)	# FSR	Average Media Center SF	Average Dining & Food Service SF	Average Gymnasium SF
Middle	69	TBD	4,518	6,648	12,425
High	34		5,138	11,131	15,943
Second. Total	51		4,828	8,890	14,184
Elem. Total	30	394	2,684	3,709	5,428

Status on School Facility Inventory– Exterior Site Inventory

- Scope of Work
- General site description, including:
  - Describe property ownership and boundaries
  - Usable acreage of open space and recreation features
  - General size and condition of playgrounds
  - Document any natural resources/areas present
  - General site accessibility/traffic issues
  - Adequacy of site utilities to accommodate new construction
- Products
  - Report for each school site
  - Electronic site plans

Capacity Discussion

- Recommended Methodology

Capacity Types

- **Program**
- How many students can a school building accommodate based upon the specific educational program
- Four different models illustrated
  - #1- actual student/teacher ratio
  - #2- class-size caps
  - #3- design capacity
  - #4- actual square feet

Capacity Types

- **Core**
- Core spaces include cafeteria, gymnasium, multipurpose room, library/media center
- Calculated based on square foot allowance per student

- **Utilization Factor**
- Percentage applied to the optimum capacity to account for the uneven distribution of students across grade levels and cohort groups

- **Level of Service**
- Goal for acceptable level of service provided by a facility based on the operational characteristics
- Reaching a certain level can trigger a study or project

Recommended Methodology

- Hybrid/Combination
  - Uses a combination of factors to provide a more realistic capacity calculation
- Programmatic and Core
  - Whichever is greater
- Goal- easily communicated, reflects existing conditions and can be repeated annually

Capacity Example

- ACPS K-5 School
  - 24 Full Size Classrooms
    - 22 Home Rooms
    - FSR- Art
    - FSR- TAG
  - Resource Room- Music
  - 2,718 Media Center
  - 4,742 Gymnasium
  - 4,511 Cafeteria

Capacity Example Cont.

- #1-Using teaching station and student/teacher ratio
- #2-Using teach station and class-size cap
- #3-Basic program analysis
- #4-Program square footage
- 95% Utilization
- Range between high and low models: 109
- Calculations provided in handout

	Total Capacity	95% Utilization
Program #1	576	548
Program #2	536	510
Program #3	624	593
Program #4	509	484

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Capacity Example Cont.

- Level of Service

	85% LOS	90% LOS	100% LOS	110% LOS	120% LOS
Program #1	466	494	548	603	658
Program #2	434	459	510	561	612
Program #3	505	534	593	653	712
Program #4	412	436	484	533	581

Capacity Example Cont.

- Capacity Analysis Enrollment and Capacity

	SY 2011	SY 2012	SY 2013	SY 2014	SY 2015
Actual Enrollment	470	495	510	530	560
#1	86%	90%	93%	97%	102%
#2	92%	97%	100%	104%	110%
#3	79%	83%	86%	89%	94%
#4	97%	102%	105%	110%	116%

Program #1	**24 FSR x S/T Ratio 24**	548
Program #2	**24 FSR x Caps**	510
~~**Program #3**~~	~~**24 FSR x 26**~~	~~593~~
Program #4	**24 FSR/35 SF**	484

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Capacity Example Cont.

- Core Capacity

		Total Capacity
Gymnasium	**100 SF/student 2 sections**	552
Cafeteria	**15 SF 1/3 student body**	501
Media Center	**4-6 SF per student**	453-680

- These calculations are for illustration purposes only and are separate from calculations for life safety and fire code

Discussion/Next Steps