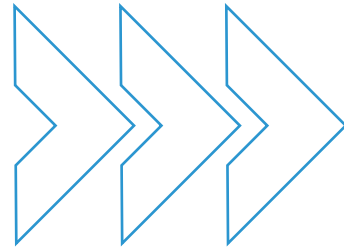


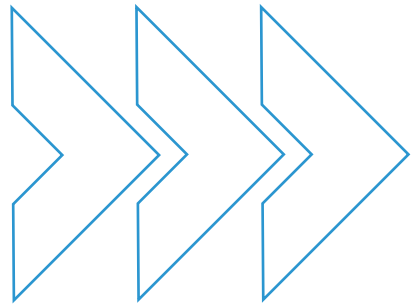


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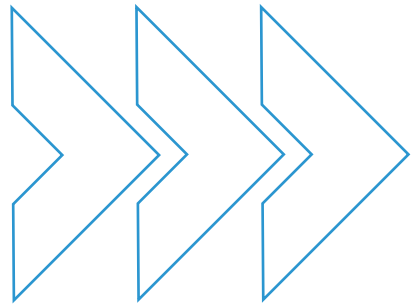


Getting to an
Educational Master
Facility Plan (EMFP)



Getting to an EMFP

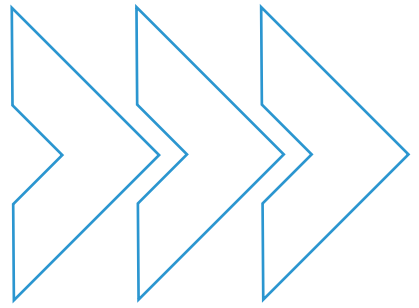
An Educational Master Facility Plan is a long term plan that sets an overall direction, answers key questions and/or establishes priorities that will guide its implementation.



Getting to an EMFP

The following should be answered or resolved by your EMFP:

1. Is there a need to redistrict/change attendance boundaries?
2. Does the District want/need to reconfigure its grade level structure?
 - a) If so, how would the facilities support that restructuring?
3. How would enrollment fluctuations (future growth or decline) be best addressed?
4. Will these learning spaces be modernized (Future Ready)?
 - a) If so, at what phasing and to what qualitative level?
 - b) Define Future Ready and its effect on Experiential Learning, the student and the teachers.
5. How long will the plan take to implement?
 - a) Establish durations and what comes first, second, third.
6. Order of Magnitude Costing. In other words, this plan will cost \$X - \$Y based upon the anticipated durations.



Implementing an EMFP

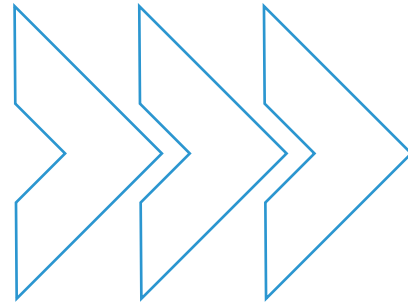
The implementation of an EMFP includes the following:

1. The formal phasing of projects and measures.
2. Establishing a budget for the initial cost of each phase or project.
 - a) Cost refinements to inform the budget will be made with concept iterations between April (today) and the adoption of an EMFP.
 - b) Cost refinements may be necessary prior to funding to adjust for market conditions and, in the case of phasing, for construction cost escalation over time.
3. Establish the funding mechanism and obtain funding
 - a) This can occur at once or be funded in phases depending on the plan.
4. Conduct a formal Design process to enact the planned changes
5. Bid the phase/project.
6. Construct the phase/project.
7. Repeat Steps 2-7 as required by the phasing/funding.

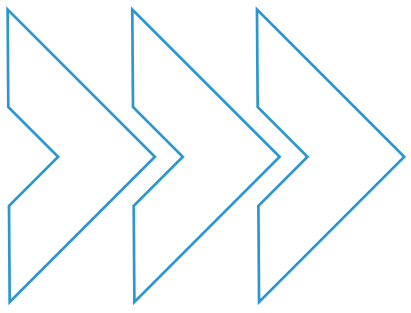


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Cost Evaluation: March 12th Concepts

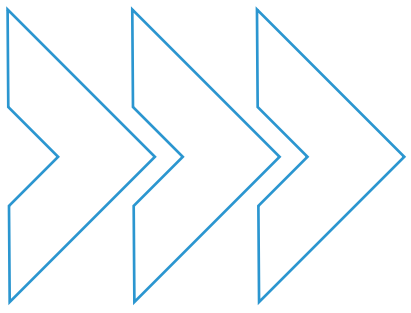


Cost Evaluation: Assumptions

At an Educational Master Facility Plan (EMFP) level, assumptions are made in order to derive cost at an order of magnitude level.

DLR Group, Ameresco and members of the Core Team have conducted working sessions and Core Team meetings focused on the cost and cost components (i.e., space needs/programming, energy, operations and maintenance) to review assumptions and relevant data in preparation for this presentation.

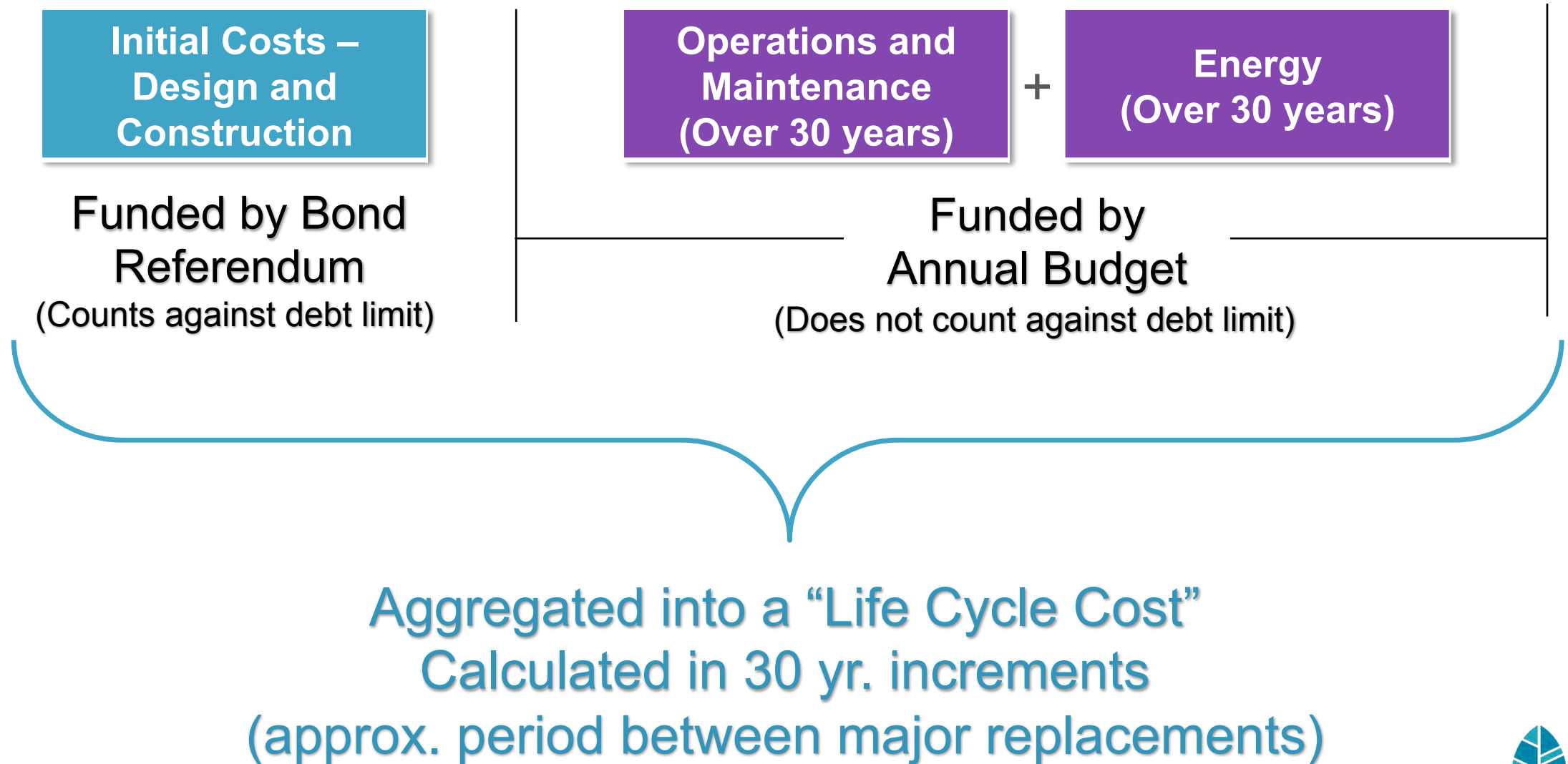
The following slide details assumptions plugged into the calculations at this time.



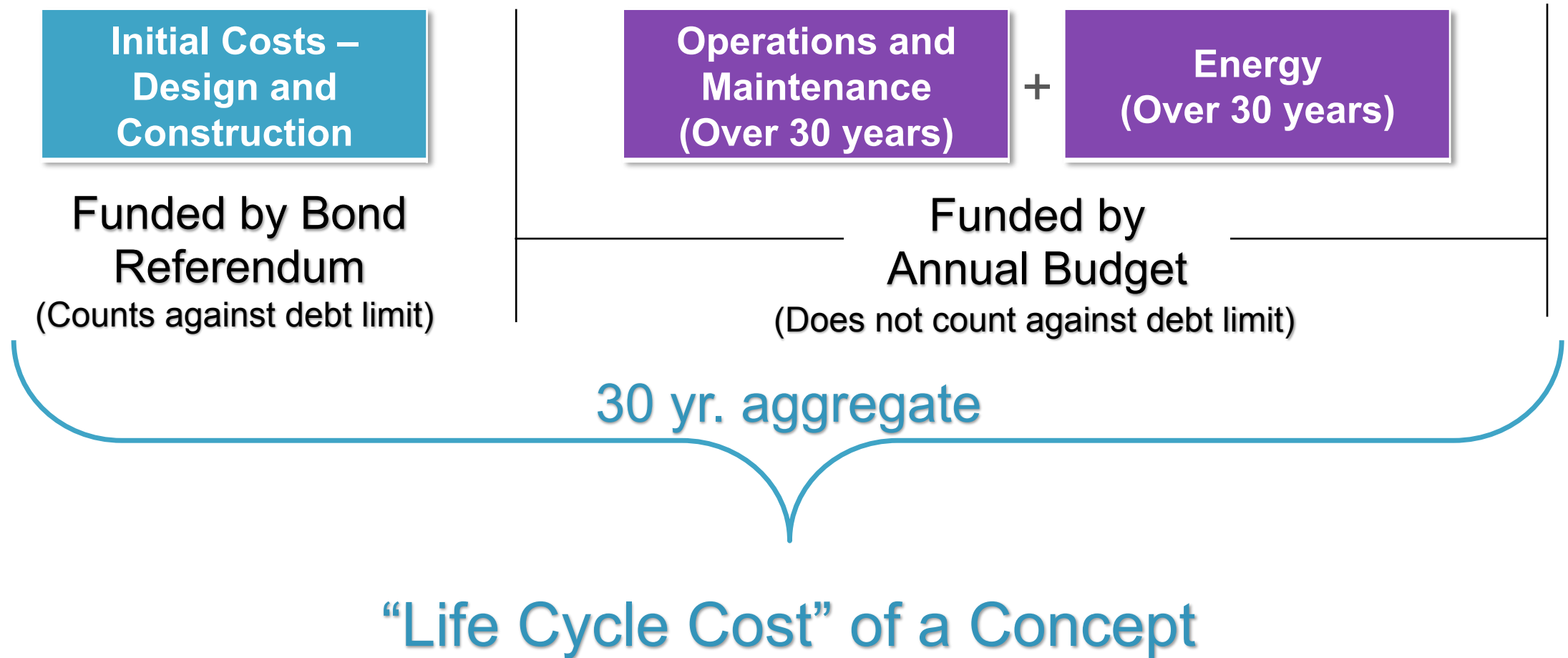
Cost Evaluation: Assumptions

1. All estimates are expressed in 2018 dollars without inflation or construction cost escalation
2. Cost basis provided by Ameresco, a third party cost estimator.
3. Energy costs were derived by modeling existing conditions with IES software using assumptions for Mechanical system changes (A/C, otherwise per concept) with current utility rates as a constant. No increase or decrease was projected.
 - a) Energy costs for Mechanical systems and building envelope (walls, roof, etc.) include a 3% drift (reduction in thermal resistance & energy efficiency) over time.
4. Operations and Maintenance (O&M) costs:
 - a) Existing/Renovated buildings were calculated using historical D36 expenditures. This is assumed at \$46.50/sf aggregated over 30 years.
 - b) New Construction was projected using CostLab Software (by CBRE) adjusted for use (Elementary Schools) and location (Chicago). This is assumed at \$25.65/sf aggregated over 30 years.
5. Proposed additions and renovations were programmed and then test fit into the existing buildings to determine level and cost of renovation.
6. No costs have been included for the ongoing energy costs, operations, sale, rental or decommissioning of schools in any of the concepts presented. Additional feedback and review is required prior to estimation/inclusion.

Cost Evaluation: Factors



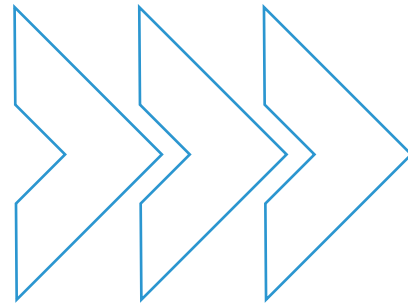
Cost Evaluation: Factors





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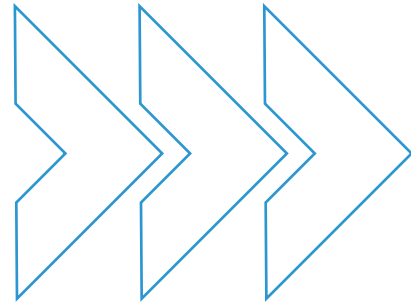
Opinion of Probable Costs: March 12th Concepts

Note: The cost basis for the estimates were provided by Ameresco, an independent third-party cost estimator.

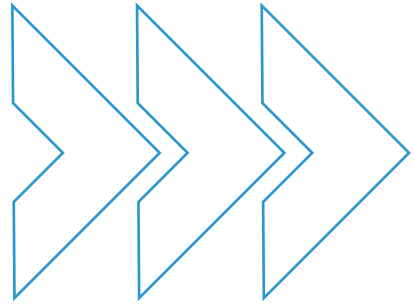


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Baseline



Baseline: Assessment

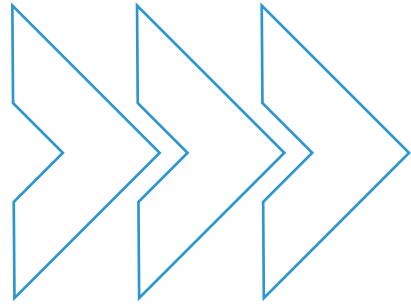
Phase I

A physical assessment of all District 36 facilities took place in July 2017

- Health Life Safety Items \$13,559,974
- HVAC (exclusive of A/C) \$3,099,137
- Accessibility \$4,447,383
- Cosmetic \$1,314,275

Total: \$22.4M (1,364 items, minor to major)

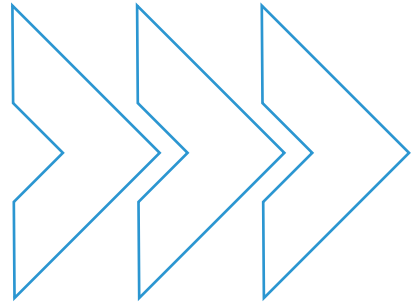
Total with A/C: \$33.7M-\$38.2M



Adjustments to Baseline

In order to compare the Baseline to the continuum of concepts presented on March 12th in a consistent manner, the following assumptions were made:

1. All schools remain open
2. Facility Assessment Items
 - a) Health Life Safety Items
 - b) Accessibility
 - c) Cosmetic Items
3. Safety & Security Enhancements are made
4. HVAC with A/C is also included



Adjustments to Baseline

Estimated
Cost:

\$43.2M

+

\$53.8M

=

\$97.0M

Est. Initial Costs
(Design & Construction)

Est. O&M Costs +
Est. Energy Costs
(over 30 years)

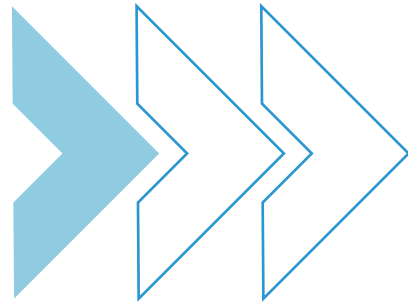
EMFP Cost Range Including -5% to +5%
Contingency of Estimated Cost

\$92.2M - \$101.9M
(over 30 years)

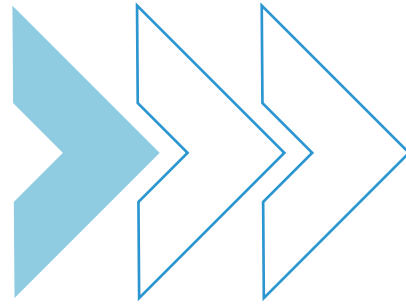


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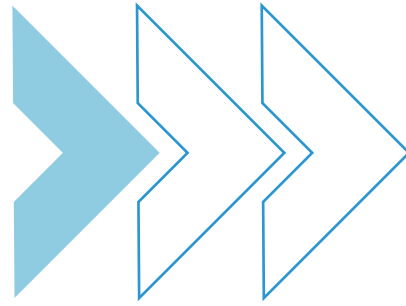
Maintain



Maintain

Four Schools; One Transition

- Three K-4 elementary schools
 - *Crow Island: ~300 students*
 - *Greeley: ~250 students*
 - *Hubbard Woods: ~275 students*
- Washburne becomes 5-8
 - *~790 students*
- Decommission Skokie
 - *Rent or repurpose*



Maintain



Facilities

- Decommissioning The Skokie School (rent or repurpose)
- Cafeterias and/or Kitchens at elementary schools



Enrollment

- Neighborhood Schools: Neighborhood elementary schools are maintained



Vision for Teaching and Learning

- Future Ready: No
- Class Sizes: Current class size guidelines cannot be guaranteed at Elementary Schools
- Transitions: Grade level reconfiguration results in one transition
- Thermal Comfort: Thermal comfort addressed by upgrading existing systems (adding AC)
- Expanded Kinetic Wellness spaces at Crow Island and Washburne

Maintain

Estimated
Cost:

\$53.5M

+

\$46.7M*

=

\$100.2M*

Est. Initial Costs
(Design & Construction)

Est. O&M Costs +
Est. Energy Costs
(over 30 years)

EMFP Cost Range Including -5% to +5%
Contingency of Estimated Cost

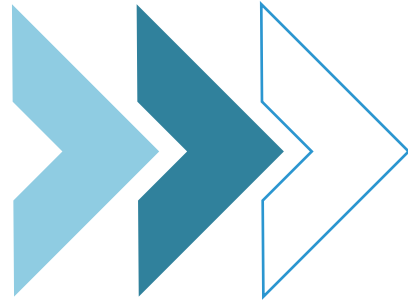
\$95.2M* - \$105.2M*
(over 30 years)

*Denotes cost correction from posted Board documents.

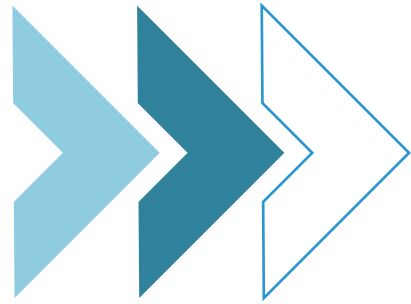


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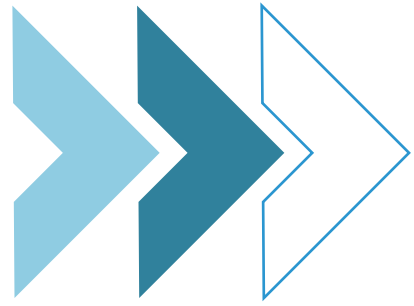
Enhance



Enhance

Four Schools; One Transition

- Three K-3 elementary schools
 - *Crow Island: ~250 students*
 - *Greeley: ~225 students*
 - *Hubbard Woods: ~225 students*
- Washburne becomes 4-8 with additions and renovations
 - *~965 students*
- Skokie reduced to auditorium only, preserved as community facility



Enhance



Facilities

- Demolish north and south wings of The Skokie School; auditorium and community space preserved for community use
- Cafeterias and/or Kitchens at elementary schools
- Additions and renovations to Washburne
- Traffic flow improved with additional drop-off points



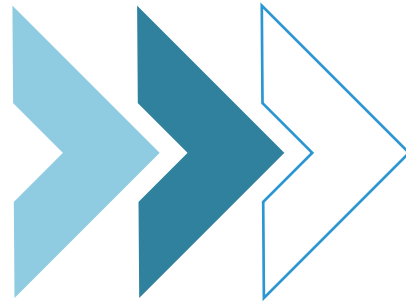
Enrollment

- Neighborhood Schools: Neighborhood elementary schools are maintained



Vision for Teaching and Learning

- Future Ready: Washburne (4-8)
- Class Sizes: Current class size guidelines can be upheld
- Transitions: Grade level reconfiguration results in one transition
- Thermal Comfort: Thermal comfort can be addressed by upgrading existing systems (adding AC)
- Expanded Kinetic Wellness spaces at Crow Island and Washburne



Enhance

Estimated
Cost:

\$84.6M

+

\$50.3M

=

\$134.9M

Est. Initial Costs
(Design & Construction)

Est. O&M Costs +
Est. Energy Costs
(over 30 years)

EMFP Cost Range Including -5% to +5%
Contingency of Estimated Cost

\$128.2M - \$141.6M
(over 30 years)



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Transform



Transform

Two Schools; One Transition

- One K-1 center at Crow Island
- New 2-8 Center constructed at Skokie site
- Washburne gymnasium preserved as community facility
- Decommission Greeley and Hubbard Woods
 - *Rent or repurpose*



Transform



Facilities

- Improved Safety & Security: New 2-8
- Universal Accessibility: New 2-8
- Traffic flow diverted from main road with pick-up/drop-off circle



Enrollment

- Neighborhood Schools: No neighborhood elementary schools
- One Winnetka school community



Vision for Teaching and Learning

- Future Ready: All students attend Crow Island for K-1 and Future Ready New 2-8 at Skokie site
- Class Sizes: Current class size guidelines upheld
- Transitions: Grade level reconfiguration results in one transition
- Thermal Comfort: Thermal comfort can be addressed in an optimal way in New 2-8, and AC would be added to Crow Island.
- Expanded Kinetic Wellness space and multipurpose at Crow Island



Transform

Estimated
Cost:

\$96.9M

+

\$22.3M

=

\$119.2M

Est. Initial Costs
(Design & Construction)

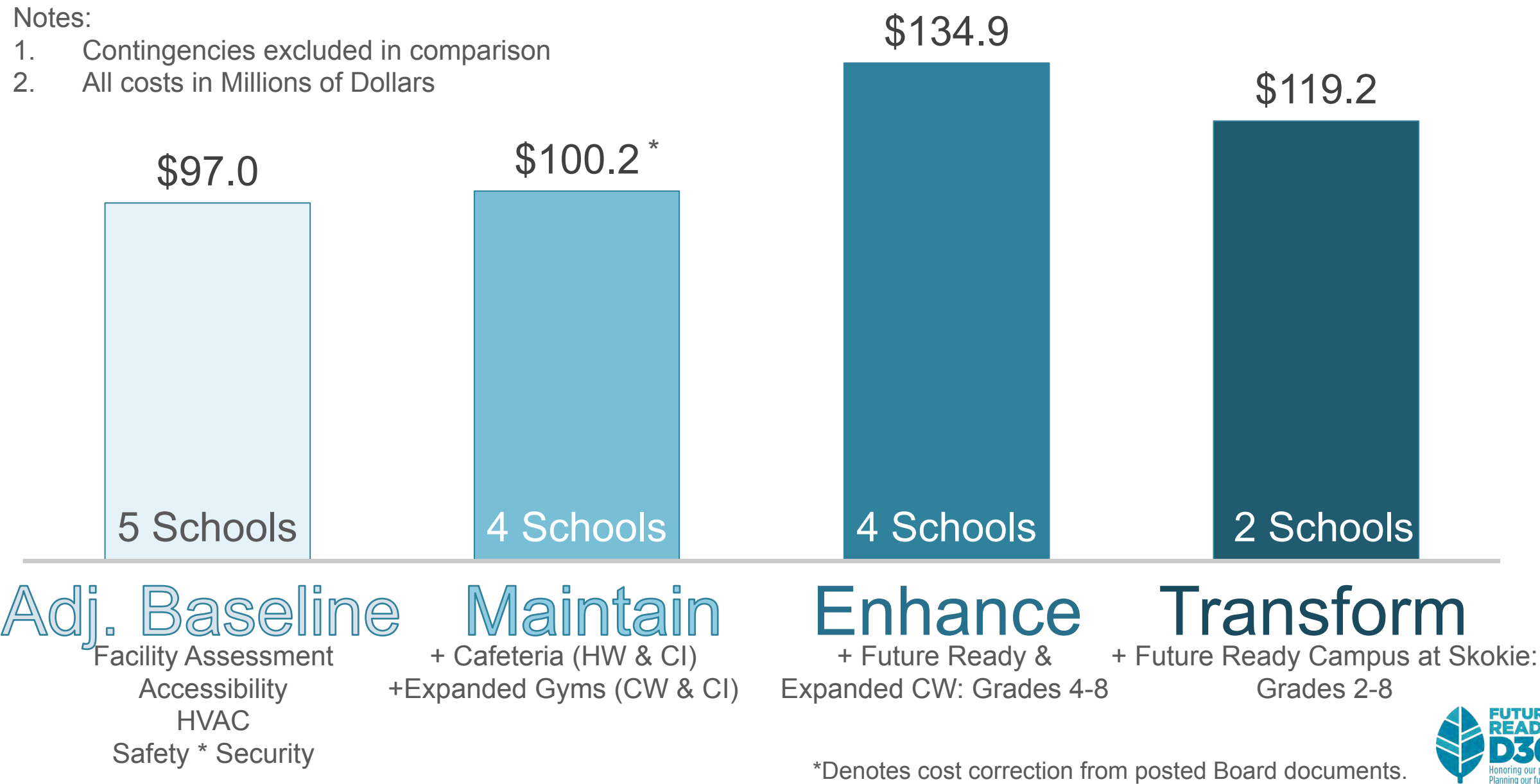
Est. O&M Costs +
Est. Energy Costs
(over 30 years)

EMFP Cost Range Including -5% to +5%
Contingency of Estimated Cost

\$113.2M - \$125.2M
(over 30 years)

Comparison of Estimated Costs (over 30 years)

- Notes:
- 1. Contingencies excluded in comparison
 - 2. All costs in Millions of Dollars





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Input & Considerations

(since March 12th)



Input & Considerations

Since the presentation to the School Board on March 12th, the Core Team has held three additional Community Engagement Sessions, established an open email address for Community input and conducted a formal survey.



Input & Considerations

Common Themes from Community:

- Importance of neighborhood schools
- Interest in details related to redistricting process, scope, and timing
- Desire for look at Future Ready space in all schools and concepts
- Curiosity about viability of a K-5 and 6-8 Model
- Need for understanding of costs to fully evaluate concepts
- Request for details about funding options
- Reminder that this is not the first time there have been enrollment challenges; learn from the past
- Understanding of the developmental needs of children in various grade level configurations
- Concerns for traffic flow and management



Input & Considerations

With that in mind, the Core Team continued reviewing the implications of:

1. Making all Concepts Future Ready
2. K-5 Schools

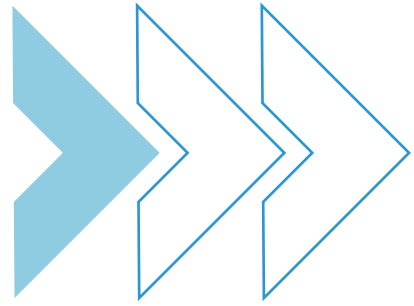


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All Concepts
Future Ready



Maintain + Future Ready

Estimated Cost:



\$53.5M

+

\$48.6M

+

\$46.7M

=

\$148.8M

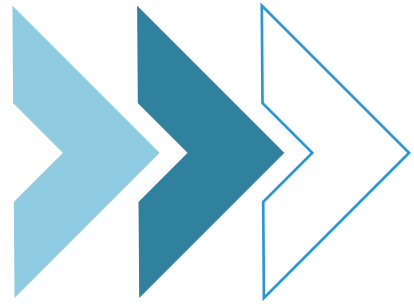
Est. Initial Costs
(Design & Construction)

Est. Future Ready
Additions & Renovations
(Design & Construction)

Est. O&M Costs +
Est. Energy Costs
(over 30 years)

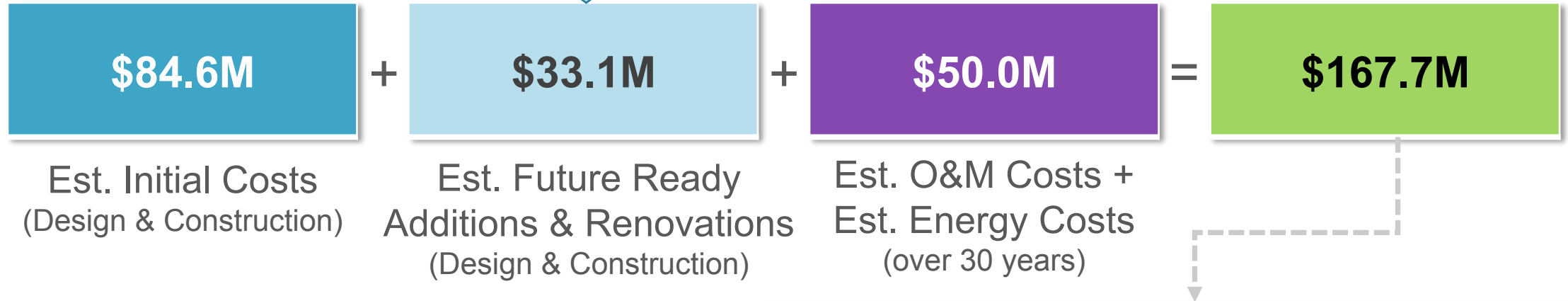
EMFP Cost Range Including -5% to +5%
Contingency of Estimated Cost

\$141.4M - \$156.2M
(over 30 years)



Enhance + Future Ready

Estimated Cost:



EMFP Cost Range Including -5% to +5%
Contingency of Estimated Cost

\$159.3M - \$176.1M
(over 30 years)



Transform + Future Ready

Estimated Cost:



\$96.9M

+

\$8.9M

+

\$22.3M

=

\$128.1M

Est. Initial Costs
(Design & Construction)

Est. Future Ready
Additions & Renovations:
Crow Island
(Design & Construction)

Est. O&M Costs +
Est. Energy Costs
(over 30 years)

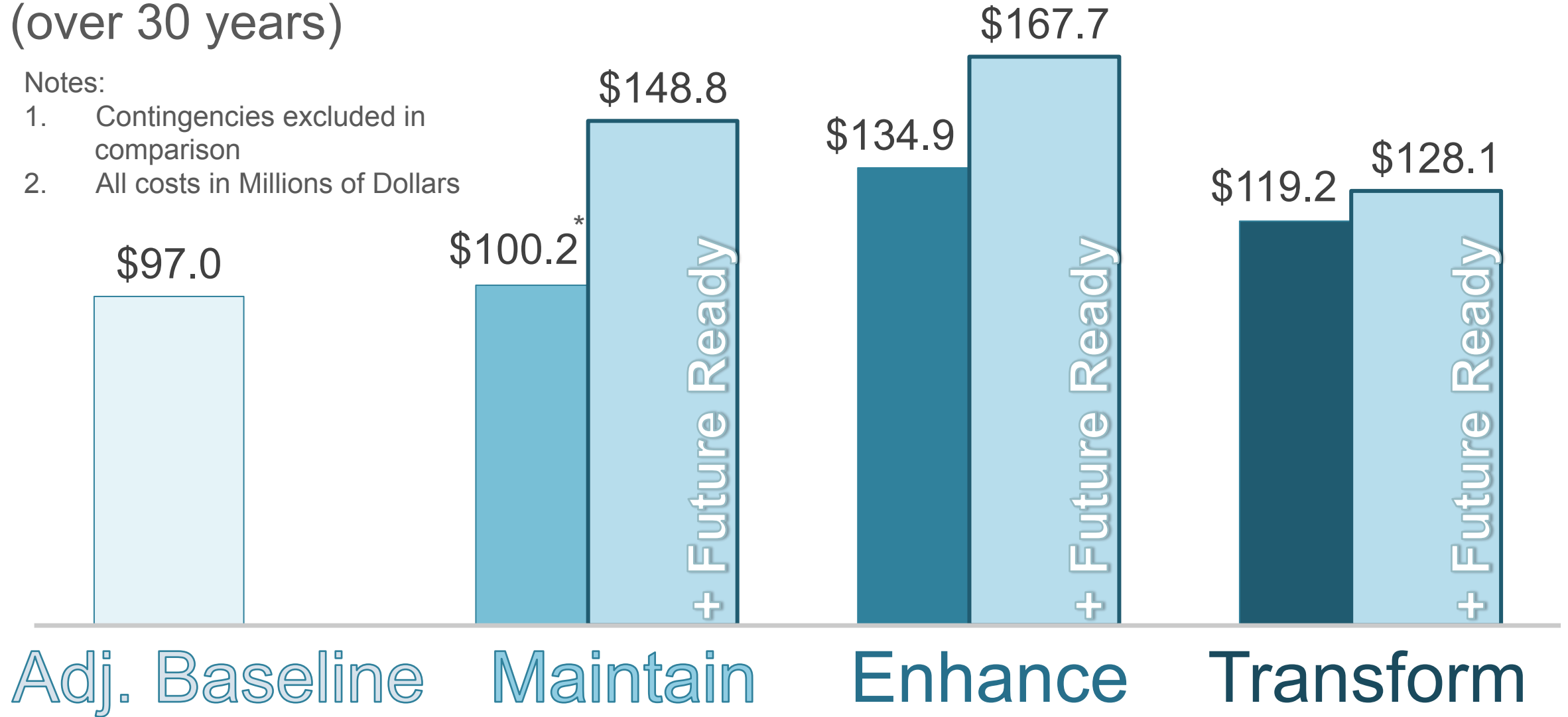
EMFP Cost Range Including -5% to +5%
Contingency of Estimated Cost

\$121.7M - \$134.5M
(over 30 years)

Comparison of Estimated Costs + ALL Future Ready (over 30 years)

Notes:

1. Contingencies excluded in comparison
2. All costs in Millions of Dollars



*Denotes cost correction from posted Board documents.



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(3) K-5 Schools
& 6-8



Input & Considerations

The Core Team has heard a desire from the School Board and several Community members to continue to review K-5 schools.

The following quantifies estimated costs for (3) K-5s + 6-8 Washburne, Future Ready Schools.



(3) K-5s, 6-8 + Future Ready

Opportunities with this Concept include:

1. Reduction in school transitions
2. Neighborhood schools

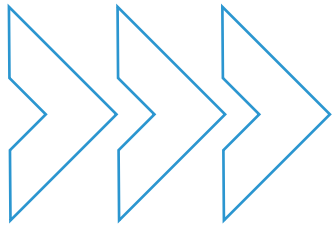
Challenges of this Concept include:

1. The Zoning Variances Required (Meetings with Village have occurred)
2. Ongoing management of enrollment fluctuations
3. Initial cost beyond debt limit
4. Site size in proportion to anticipated additions (HW)

(3) K-5 elementary schools with redistricting to balance enrollment

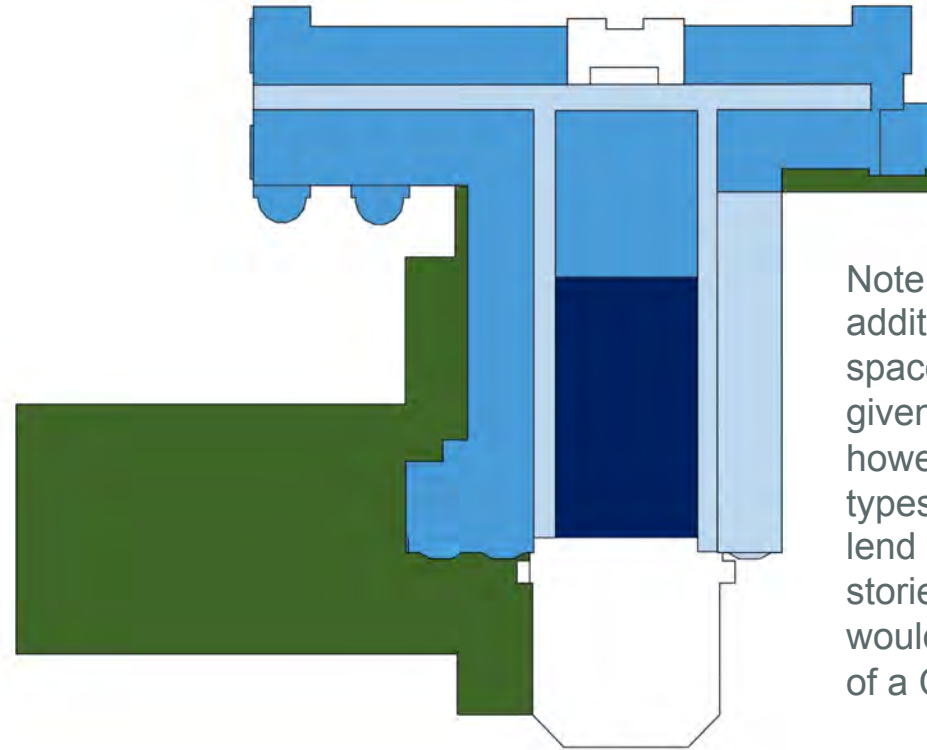
- *Crow Island: ~345 students*
- *Greeley: ~343 students*
- *Hubbard Woods: ~342 students*

Please refer to the Test Fit Diagrams for potential site impacts and additions required to support (3) K-5 schools + Future Ready concept.



Hubbard Woods: K-5 Future Ready Test Fit

	K-5 + FR RENOVATION TEST FIT	% of EXISTING
<i>Existing</i>	<i>53,491 sf</i>	
Light Reno	6,500 sf	12%
Medium Reno	20,000 sf	37%
Heavy Reno	12,000 sf	23%
<i>Total Reno</i>	<i>38,500 sf</i>	<i>72%</i>
Addition	22,600 sf	41%
<i>Total Size</i>	<i>76,091 sf</i>	<i>141%</i>



Note: The size of the estimated addition would limit outdoor space. Consideration was given to two story construction, however some of the space types in the addition do not lend themselves to having two stories. An example of this would be the planned inclusion of a Cafeteria.

Notes:

1. Test Fits illustrate one way to accommodate the anticipated spaces within the existing building; other permutations are possible.
2. The Activity Based Program Model is a master planning tool and is subject to change if any of the input variables change. Once a design process occurs, detailed programming and design will occur.



Light
Renovation



Medium
Renovation



Heavy
Renovation



Addition



(3) K-5s, 6-8 + Future Ready

Estimated
Cost:

\$99.5M

+

\$48.3M

=

\$147.8M

Est. Initial Costs
(Design & Construction)

Est. O&M Costs +
Est. Energy Costs
(over 30 years)

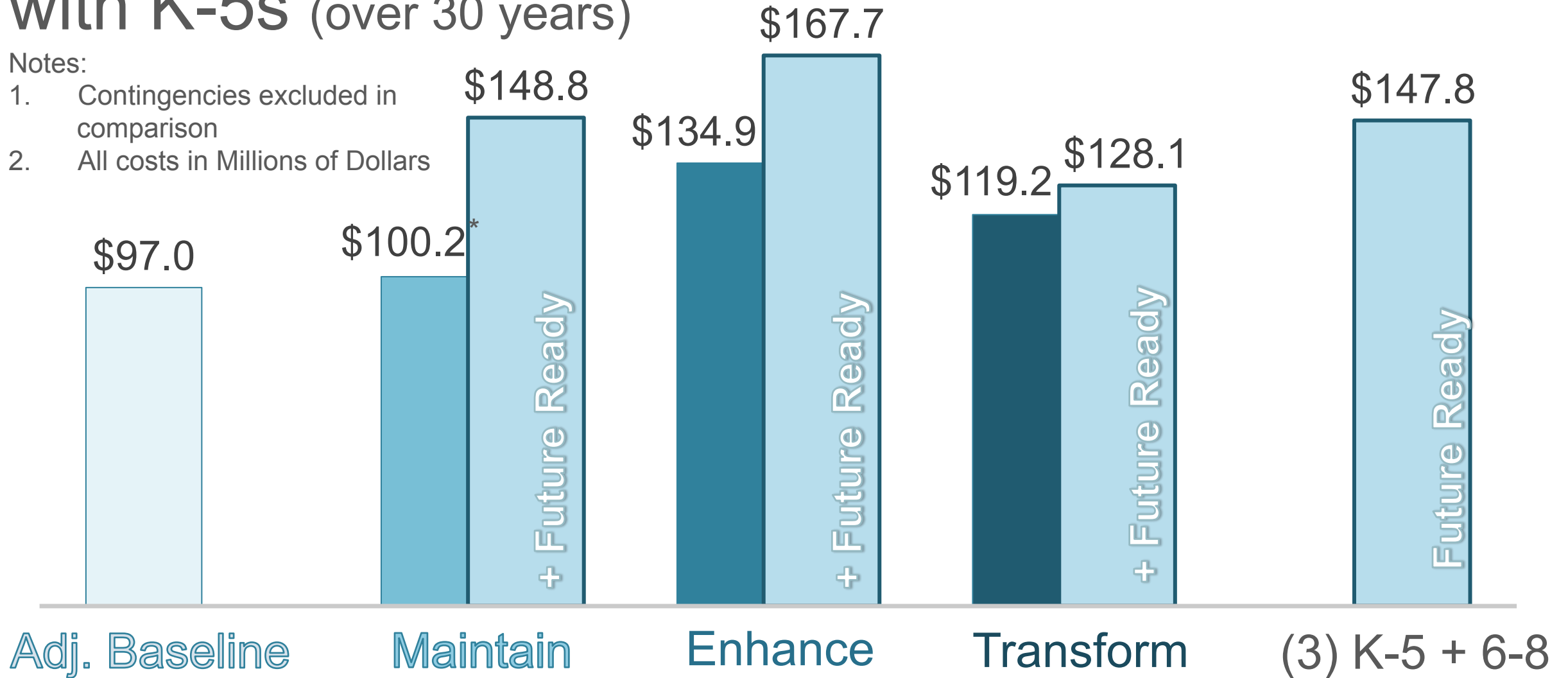
EMFP Cost Range Including -5% to +5%
Contingency of Estimated Cost

\$140.4M - \$155.2M
(over 30 years)

Comparison of Estimated Costs + Future Ready with K-5s (over 30 years)

Notes:

1. Contingencies excluded in comparison
2. All costs in Millions of Dollars



*Denotes cost correction from posted Board documents.



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Estimated Costs Above Adjusted Baseline



Estimate Costs above Adj. Baseline

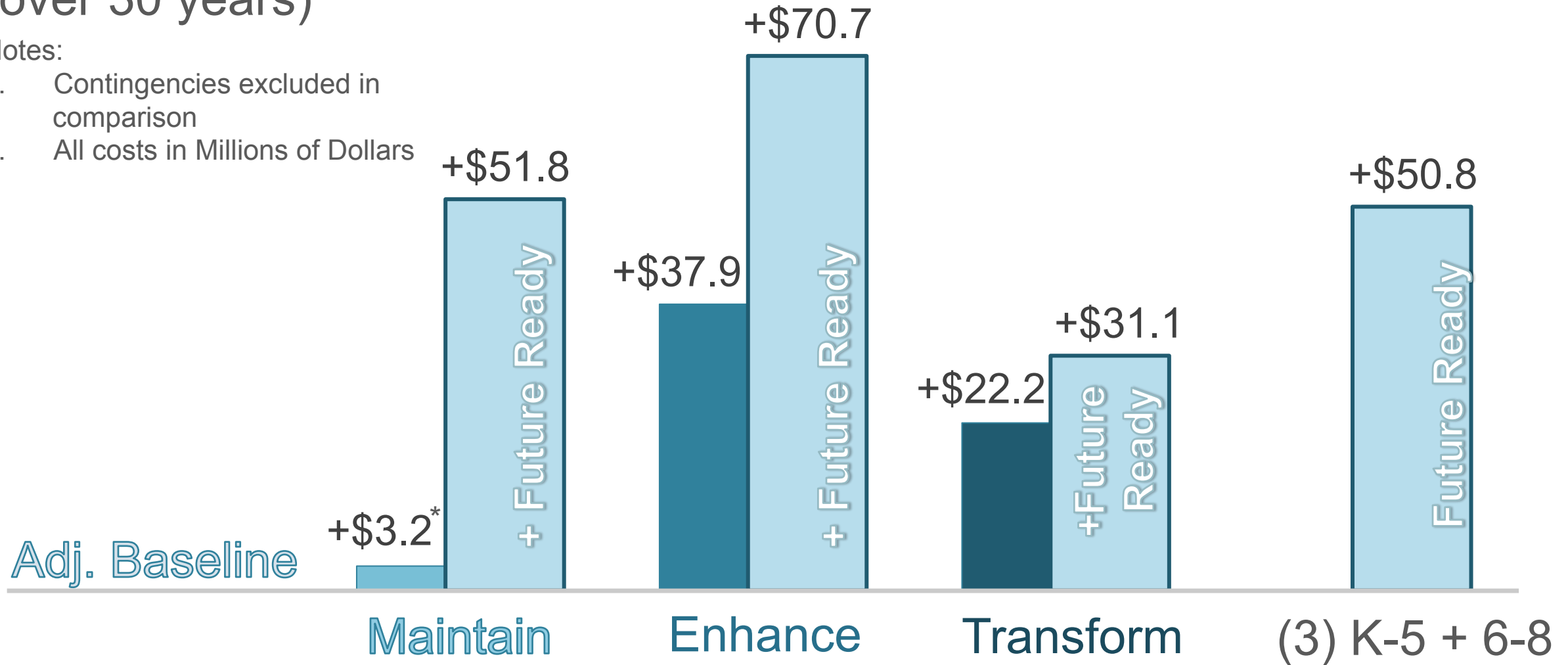
If the School Board were to consider the Adjusted Baseline* as the minimum amount of work to be phased in over time, the following slide illustrates the cost delta to select to one of the other EMFP concepts.

*Adjusted Baseline includes: Facility Assessment +
Safety & Security Enhancements + Accessibility + HVAC with A/C

Estimated Costs above Adjusted Baseline (over 30 years)

Notes:

1. Contingencies excluded in comparison
2. All costs in Millions of Dollars

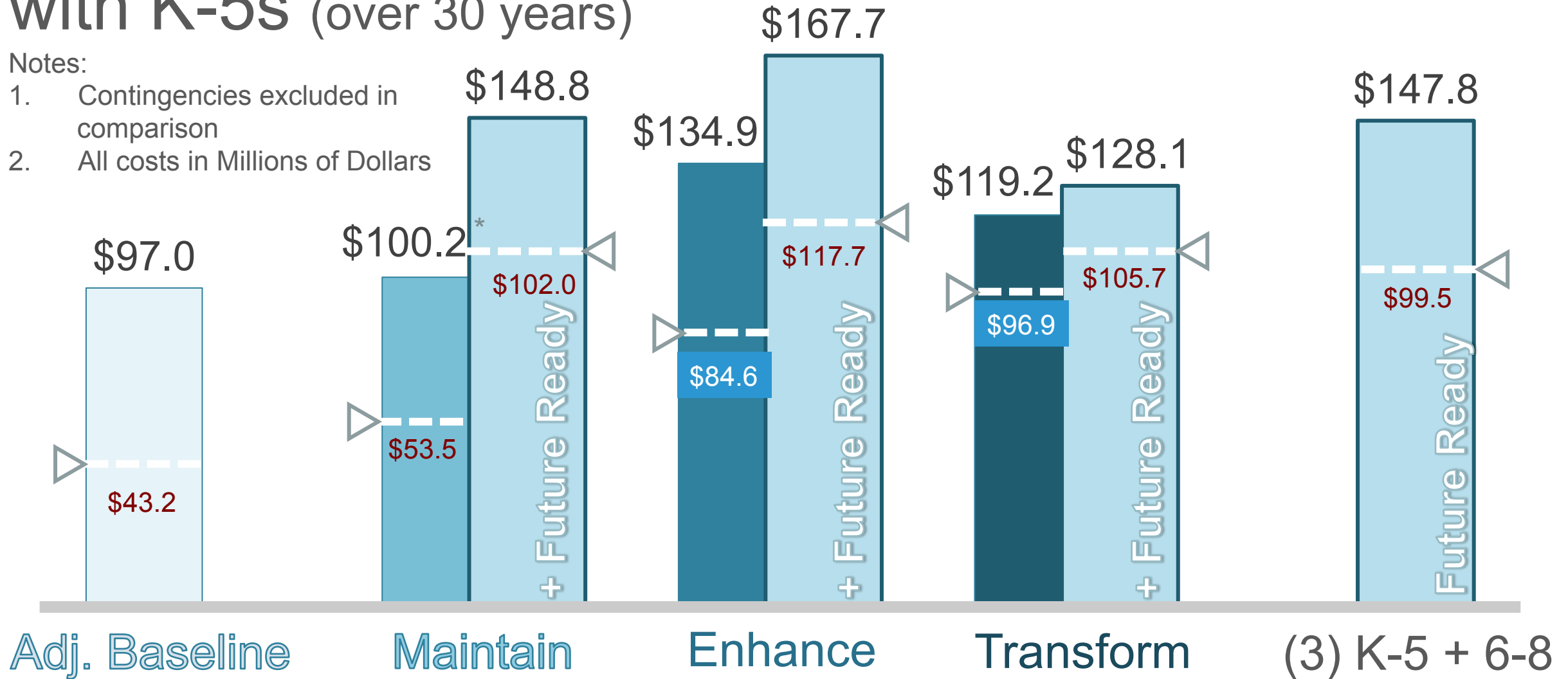


*Denotes cost correction from posted Board documents.

Comparison of Estimated Costs + Future Ready with K-5s (over 30 years)

Notes:

1. Contingencies excluded in comparison
2. All costs in Millions of Dollars



Below this line are initial costs. Above this line are long-term costs.

*Denotes cost correction from posted Board documents.



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Estimated Non-Instructional Staffing Impact



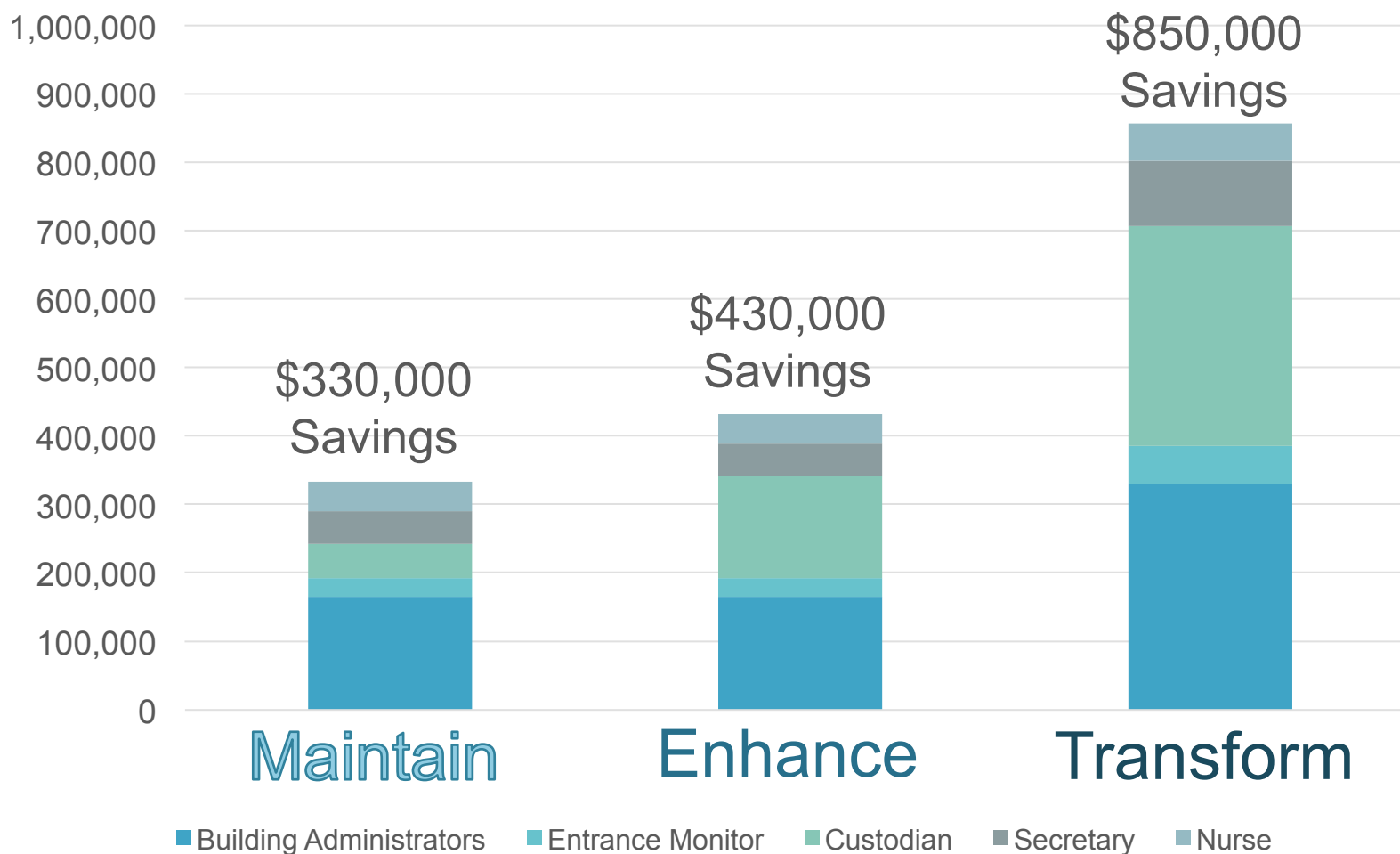
Estimated ANNUAL SAVINGS: Non-Instructional Staffing

A preliminary review of the impact of Maintain, Enhance and Transform on non-instructional staffing was conducted.

Non-Instructional Staffing includes positions like: Building Administrators, Entrance Monitors, Custodians, Secretarial Staff and Nurses.



Estimated **ANNUAL SAVINGS:** Non-Instructional Staffing





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Additional Detail
and Supporting
Information



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Q & A



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Cost Context: Skokie School Alternate Use 1980-1998



Cost Context: Skokie School

From the years 1980-1998, Skokie School was used for other purposes:

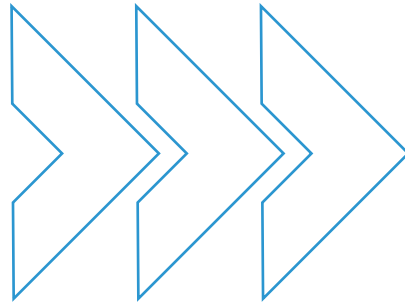
- Renters included The Cove School, Winnetka Public School Nursery, The Winnetka Park District and another Pre-School
- Over that time the goal of the District was to run this program at break-even, records from 1995-98 show that this was the case
- Renters were charged operating costs per square foot

Note: This information is for context only. No costs have been included for the ongoing energy costs, operations, sale, rental or decommissioning of schools in any of the concepts presented. Additional feedback and review is required prior to estimation/inclusion.

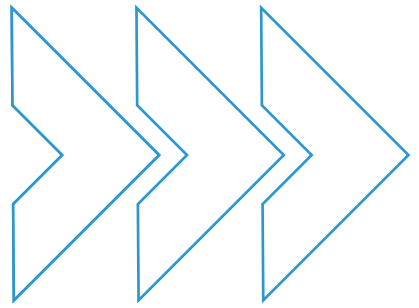


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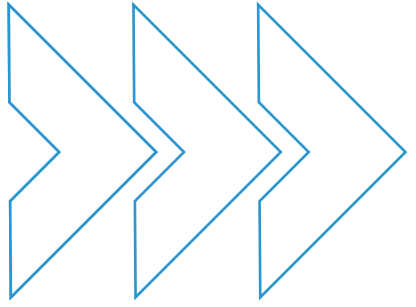


Build New or Renovate?



Build New or Renovate?

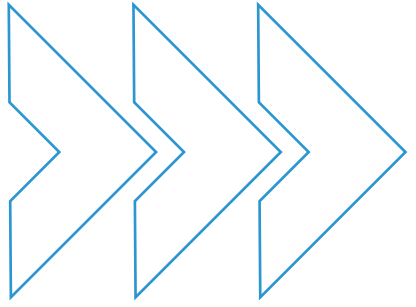
What is the long term value of an existing building when considering an investment in substantial renovations versus replacing it with a new facility?



Build New or Renovate?

Industry Benchmark for Initial Review:

If the cost of the renovation is projected to exceed 60% of the replacement cost of a comparable building, it is appropriate to ask the question whether or not to replace it.

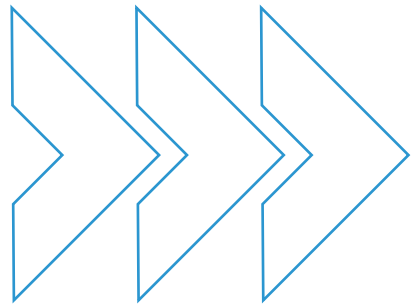


Build New or Renovate?

The Core Team reviewed and compared the repair vs. replacement of the existing schools to see if any would meet the initial review benchmark.

This is NOT a recommendation of a course of action by the Core Team.

Community / District values should govern.



Build New or Renovate?

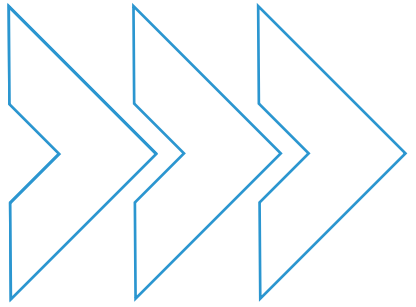
The repair and operations of existing **Crow Island** are **55%** of the cost of repair and operations of a same size replacement.

The repair and operations of existing **Greeley** are **63%** of the cost of repair and operations of a same size replacement.

The repair and operations of existing **Hubbard Woods** are **75%** of the cost of repair and operations of a same size replacement.

The repair and operations of existing **Skokie** are **57%** of the cost of repair and operations of a same size replacement.

The repair and operations of existing **Washburne** are **43%** of the cost of repair and operations of a same size replacement.

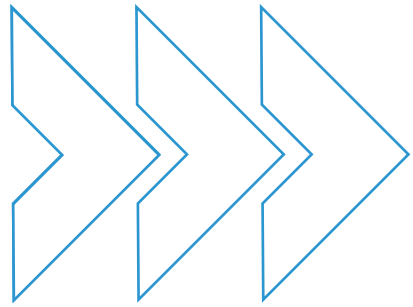


Considerations for Renovations (at any site)

There are several key factors to be considered in any Future Ready renovation scenario.

Namely, we'll explore: Adjacency, Proximity, Dimensional Constraints and Structural Feasibility.

The following slide qualifies these factors with examples and contrasts Existing vs. New Builds.



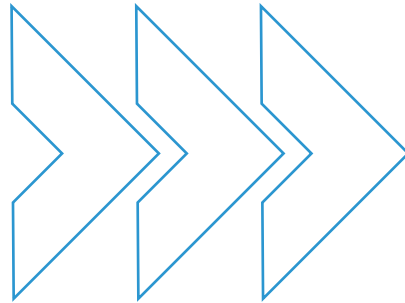
Considerations for Renovations (at any site)

	Adjacencies	Proximity	Dimensional Constraint	Structural Feasibility
<i>Example</i>	A grade level of Classrooms next door to a developmentally appropriate Makerspace, with a two-grade shared Multipurpose room around the corner.	As a student moves through their day, the spaces they'll visit are located close enough to one another to have reasonable transition time.	A room's length, width, and height. A high-bay space takes up more vertical space than a typical room, but allows for building high projects or flying drones (2018 HW project).	Once built, some parts of a building are cost-prohibitive or extremely difficult to move.
Existing	Some rooms may be located next to necessary resources; not all will achieve this.	At some points in the day, students may have to traverse most or all of the school to reach a resource. Instructional time may be lost during some transitions.	Existing ceiling height, exterior, and interior walls limit options for reconfiguring rooms. Spatial equity (size and dimensional conformity) may vary for practical reasons. Some existing buildings may offer more options than others.	Stairwells, elevator shafts, plumbing, and mechanical systems are very expensive to move. Structural supports should not be moved.
New Build	Clusters of rooms can be positioned in balanced combinations to provide access to necessary resources	All-school resources can be positioned equidistant from grade level areas. Grade level resources can be central to their clusters. Transition time is more balanced and predictable.	Areas of a new building can be strategically designed to provide vertical space. Spatial equity can be ensured where one classroom is the same size as another. New Build can be planned for easier horizontal or vertical reconfiguration in the future.	Major systems and structural elements can be positioned strategically to provide larger areas of easily reconfigured space for future changes.

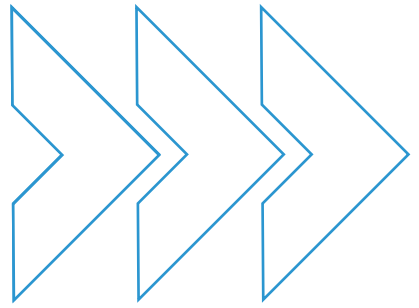


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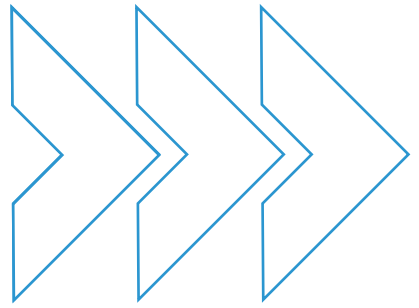
Test Fits



Renovation Test Fit Assumptions

- Max class size 22 students
- Dedicated classrooms for ALL teachers
- Enrollment based on 2018-2019 projections
- Teaching & Learning activities from Phase 2 input

Note: The concept of **four K-5 schools (Skokie being converted to the additional K-5)** was considered, but ultimately not included in test fits, due to academic challenges with extremely low section sizes.

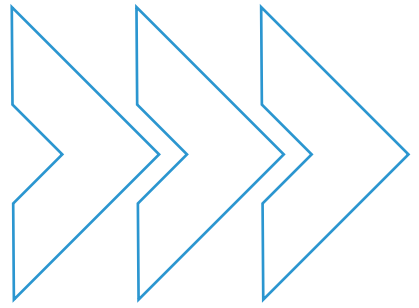


Levels of Renovation

Light Renovation: Changes to finishes and fixtures, etc.

Medium Renovation: Alteration of interior walls, ceilings, circulation, etc.

Heavy Renovation: Significant alteration of interior and exterior walls, structure, roofs, major systems, etc.



How big might 'it' be?

Activity-Based Program Modeling

Inputs from District

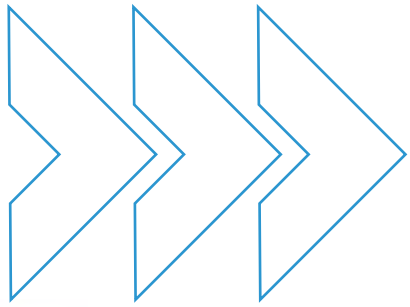
- Enrollment & projections
- Grade configurations
- Maximum class size
- Time spent in activities
- SF/student in classrooms
- Desired level of flexibility

Outputs from Model

- Space types (primary, secondary, tertiary)
- Number of spaces
- Square footage
- Support & Admin spaces

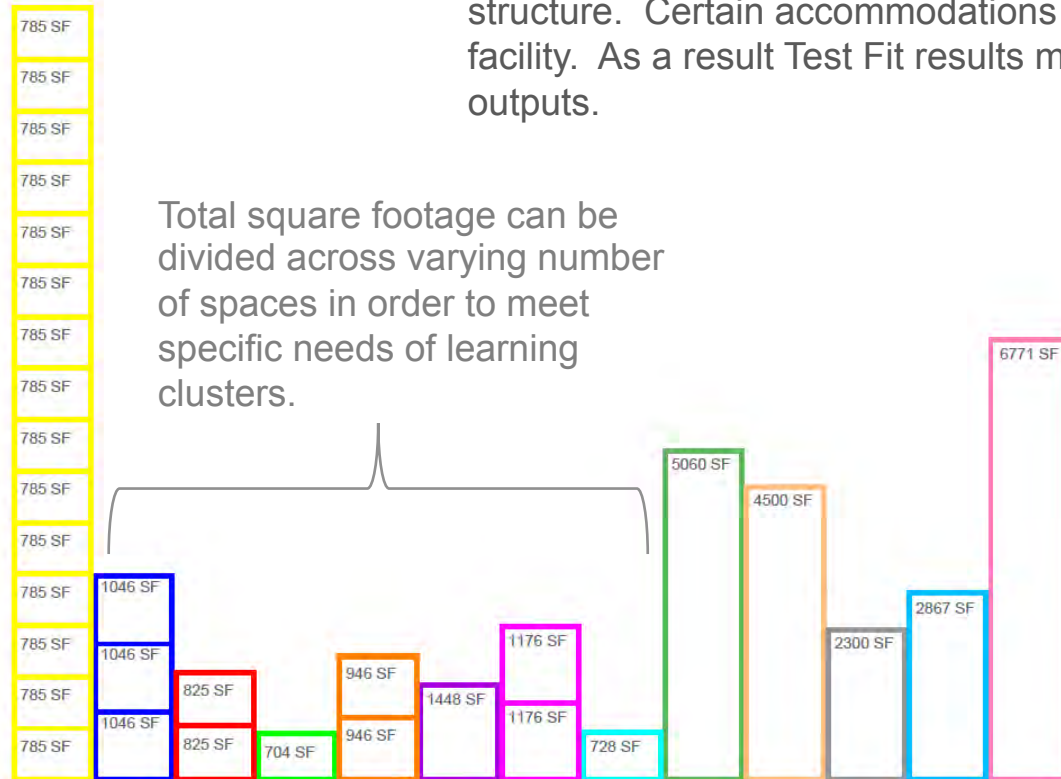
Activity-Based Program Modeling

Program Space Type	Primary Activity Types	Well-Suited For:	#	Total SF
Yellow	Direct Instruction, Hard Focus, Discussion	Dedicated Classroom and Shared Classroom	15	11,775
Blue	Hands-On Learning, Prototype/Build	Experiential, STEM, and Project-Based Learning	3	3,138
Red	Discussion, Presentation, Distance Learning	Collaboration, Presentation, and Digital Learning	2	1,650
Green	Brainstorming, Reflection, Personalized Learning	Creative Brainstorming, Digital Learning, and Reflection	1	704
Orange	Flex Space, Enrichment Activities & Instruction	Enrichment, Languages, and Arts with 2D Materials	2	1,892
Purple	Enrichment Activities - Studio	Enrichment, Music, and Arts with 3D Materials	1	1,448
Pink	Quiet Study, Intervention	Intervention and Special Education	2	1,176
Teal	Collaboration Space	Group Work (various sizes) and Socialization	1	728
Gymnasium	Physical Education, Sports	Kinetic Wellness and Large Activities	1	5,060
Auditorium/Elementary Stage	Formal Performances	Shows and Large Gatherings	1	4500
Cafeteria	Socializing, Eating, Gathering	Eating and Socialization	1	2300
Library	Research/Inquiry with Written or Digital Materials	Accessing Learning Resources	1	2867
Professional Spaces	Meetings, Collaboration, Preparation	Professional Development and Office Work	1	6771
Total Program Area w/ Grossing Factor				69,362
Total Test Fit area				74,777



Sample Test Fit Greeley as a Future Ready K-4

The process of Test Fitting is undertaken to help determine the applicability of a program model output into an existing structure. Certain accommodations are likely made (see preceding 'Considerations for Renovation' slides) at each facility. As a result Test Fit results may be comparable, but not necessarily equal in all respects to program modeling outputs.



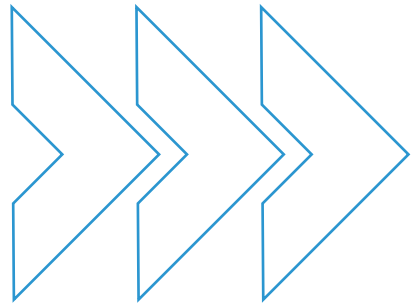
Total square footage can be divided across varying number of spaces in order to meet specific needs of learning clusters.

Program Areas by Use
(Model Output)

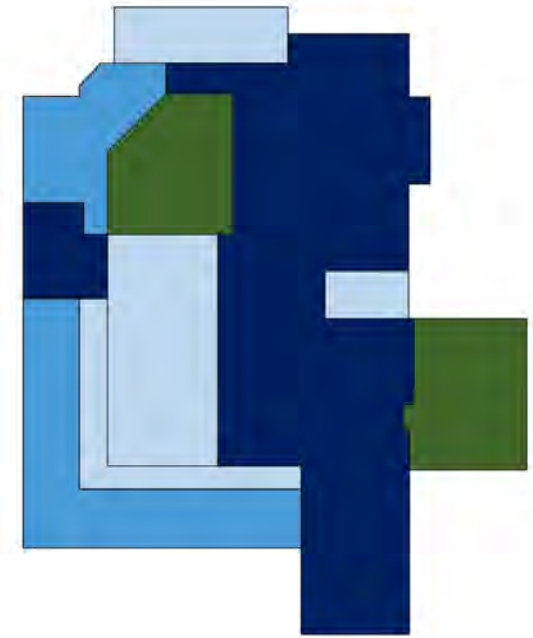
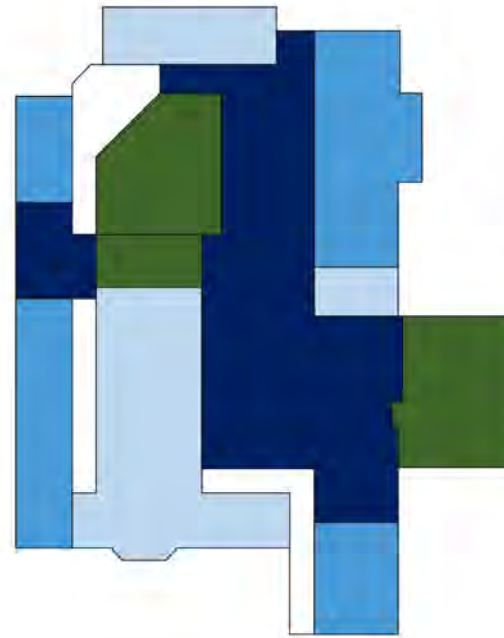
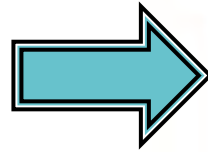
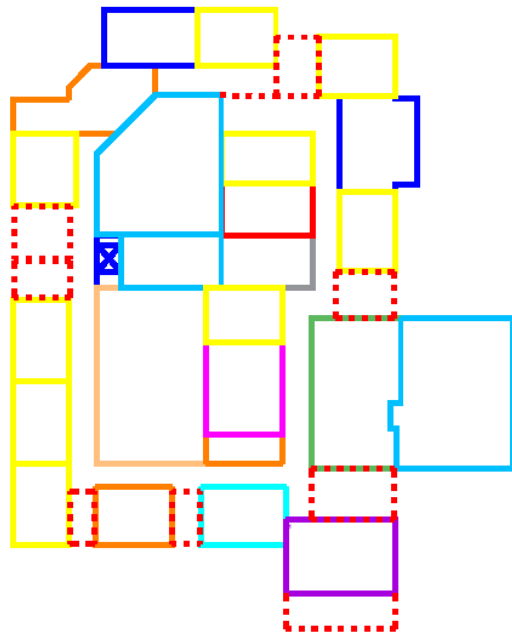
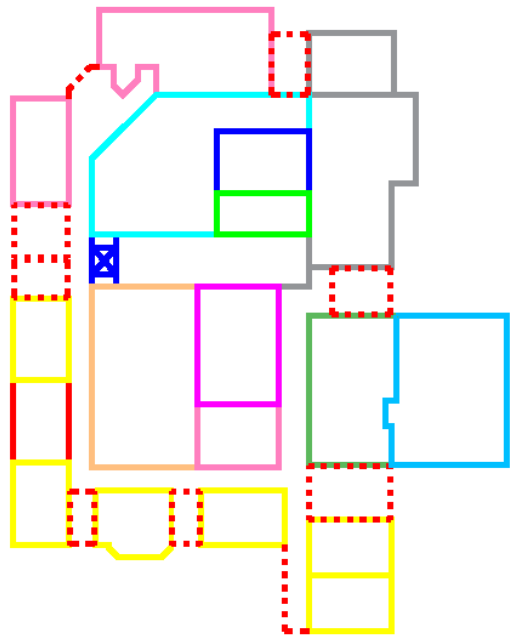


Examples of Existing Constraints

- Stairways
- Structural Walls
- Mechanical Units



Sample Test Fit Greeley as a Future Ready K-4



Program Area Overlay onto Floor Plan

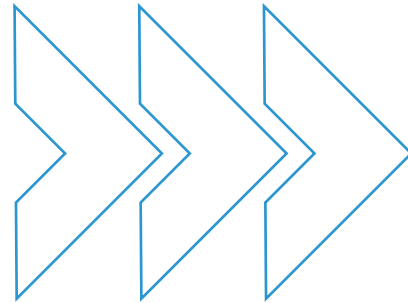
Approximate Areas of
Renovation/Additions Needed



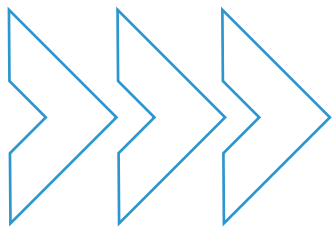


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Test Fits: Summary Findings

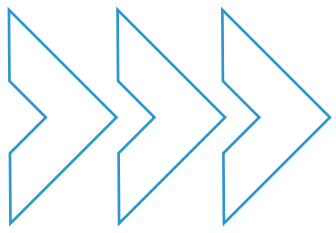


Crow Island: Test Fits

	K-3 Future Ready RENOVATION TEST FIT	% of EXISTING	K-4 Future Ready RENOVATION TEST FIT	% of EXISTING	K-5 Future Ready RENOVATION TEST FIT	% of EXISTING
<i>Existing</i>	66,725 sf		66,725 sf		66,725 sf	
Light Reno	26,000 sf	39%	29,000 sf	43%	29,000 sf	43%
Medium Reno	14,000 sf	21%	14,000 sf	21%	14,000 sf	21%
Heavy Reno	10,300 sf	15%	7,500 sf	11%	7,500 sf	11%
<i>Total Reno</i>	<i>50,300 sf</i>	<i>75%</i>	<i>50,500 sf</i>	<i>75%</i>	<i>50,500 sf</i>	<i>75%</i>
Addition	7,700 sf	12%	12,000 sf	18%	18,000 sf	27%
<i>Total Size</i>	<i>74,425 sf</i>	<i>112%</i>	<i>78,725 sf</i>	<i>118%</i>	<i>84,750 sf</i>	<i>127%</i>

Notes:

1. Test Fits illustrate one way to accommodate the anticipated spaces within the existing building; other permutations are possible.
2. The Activity Based Program Model is a master planning tool and is subject to change if any of the input variables change. Once a design process occurs, detailed programming and design will occur.

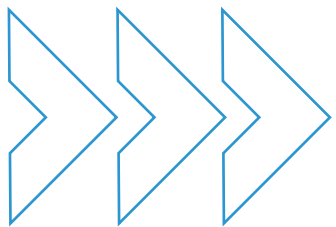


Greeley: Test Fits

	K-3 + FR RENOVATION TEST FIT	% of EXISTING	K-4 + FR RENOVATION TEST FIT	% of EXISTING	K-5 + FR RENOVATION TEST FIT	% of EXISTING
<i>Existing</i>	<i>68,277 sf</i>		<i>68,277 sf</i>		<i>68,277 sf</i>	
Light Reno	10,500 sf	15%	12,000 sf	17%	12,000 sf	17%
Medium Reno	17,000 sf	25%	15,000 sf	22%	15,000 sf	22%
Heavy Reno	27,000 sf	39%	29,000 sf	44%	29,000 sf	44%
<i>Total Reno</i>	<i>54,500 sf</i>	<i>79%</i>	<i>56,000 sf</i>	<i>83%</i>	<i>56,000 sf</i>	<i>83%</i>
Addition	Not Required	0%	6,500 sf	10%	13,575 sf	20%
<i>Total FR Size</i>	<i>68,277 sf</i>	<i>100%</i>	<i>74,777 sf</i>	<i>110%</i>	<i>81,852 sf</i>	<i>120%</i>

Notes:

1. Test Fits illustrate one way to accommodate the anticipated spaces within the existing building; other permutations are possible.
2. The Activity Based Program Model is a master planning tool and is subject to change if any of the input variables change. Once a design process occurs, detailed programming and design will occur.



Hubbard Woods: Test Fits

	K-3 + FR RENOVATION TEST FIT	% of EXISTING	K-4 + FR RENOVATION TEST FIT	% of EXISTING	K-5 + FR RENOVATION TEST FIT	% of EXISTING
<i>Existing</i>	<i>53,491 sf</i>		<i>53,491 sf</i>		<i>53,491 sf</i>	
Light Reno	6,500 sf	12%	6,500 sf	12%	6,500 sf	12%
Medium Reno	20,000 sf	37%	20,000 sf	37%	20,000 sf	37%
Heavy Reno	12,000 sf	23%	12,000 sf	23%	12,000 sf	23%
<i>Total Reno</i>	<i>38,500 sf</i>	<i>72%</i>	<i>38,500 sf</i>	<i>72%</i>	<i>38,500 sf</i>	<i>72%</i>
Addition	5,095 sf	10%	15,650 sf	29%	22,600 sf	41%
<i>Total FR Size</i>	<i>58,586 sf</i>	<i>110%</i>	<i>69,141 sf</i>	<i>129%</i>	<i>76,091 sf</i>	<i>141%</i>

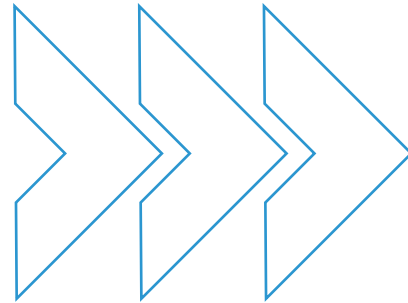
Notes:

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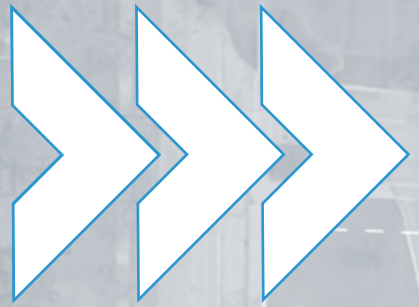


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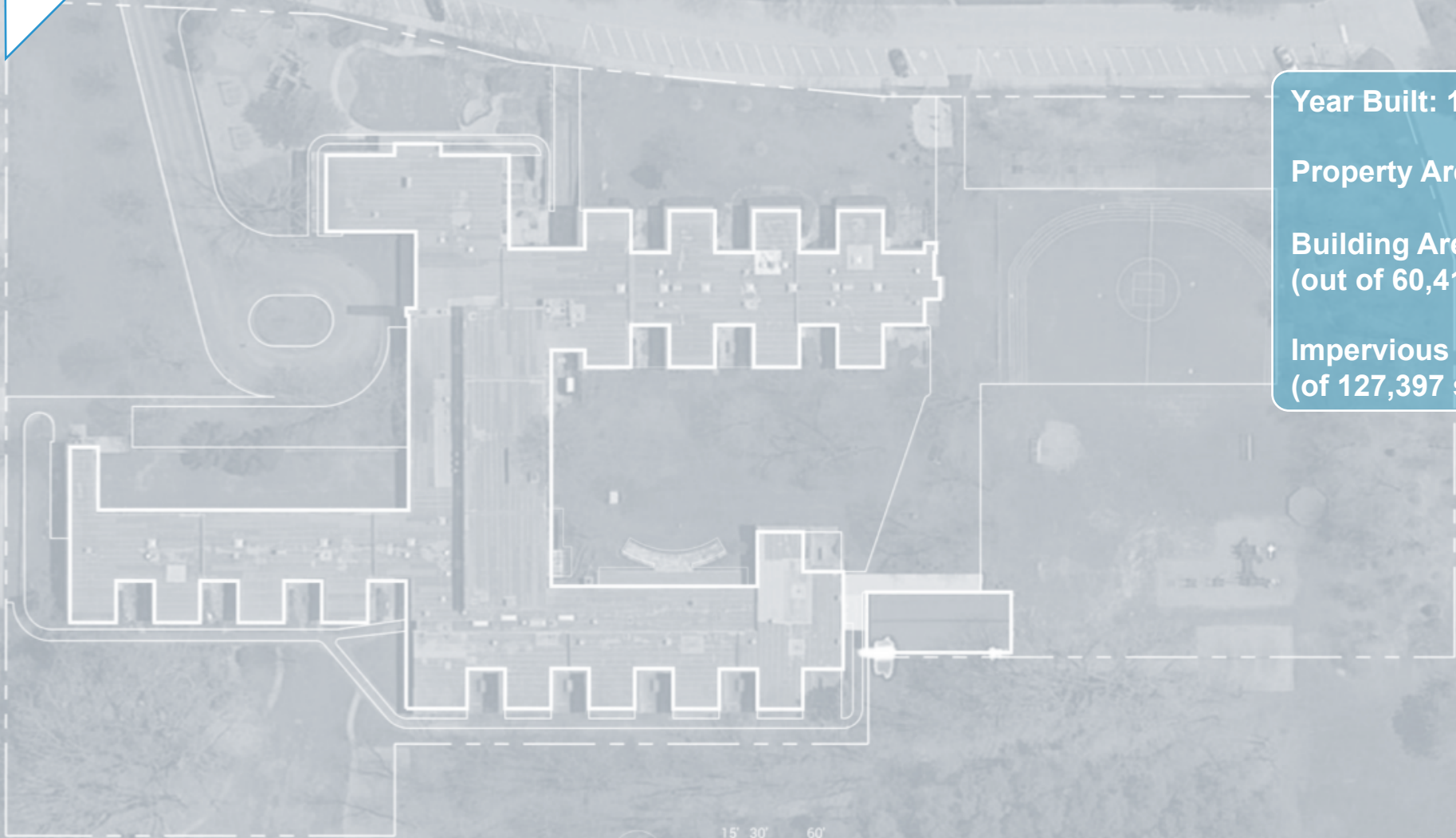
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Test Fits by School



Crow Island at a Glance



Year Built: 1940 (78 years old)

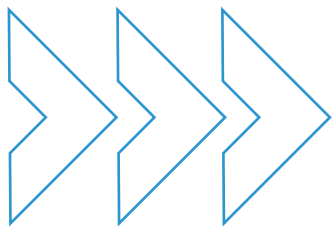
Property Area: 254,784 sf

**Building Area: 66,725 sf
(out of 60,418 SF allowed by FAR)**

**Impervious Area: 98,246 sf
(of 127,397 sf allowed)**

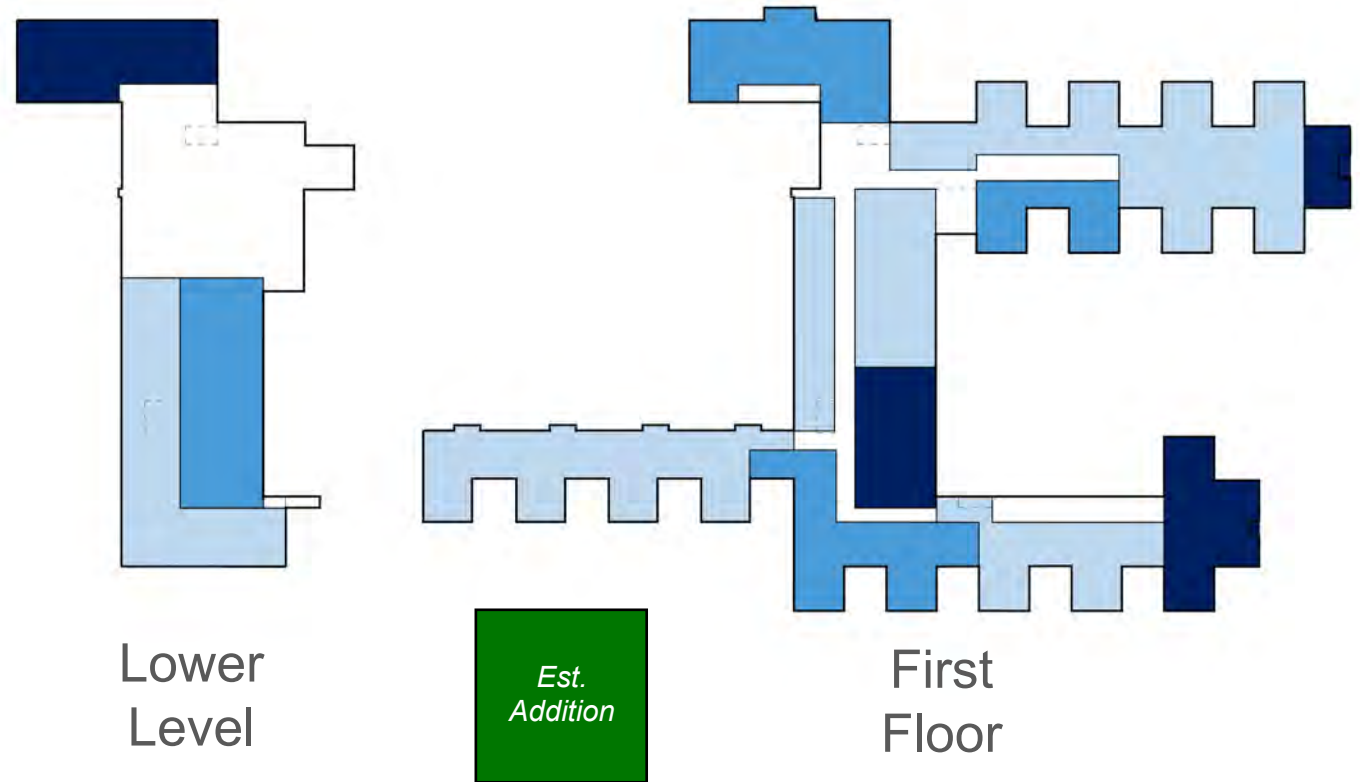


Expansion would require Zoning Variances to be approved prior to construction.



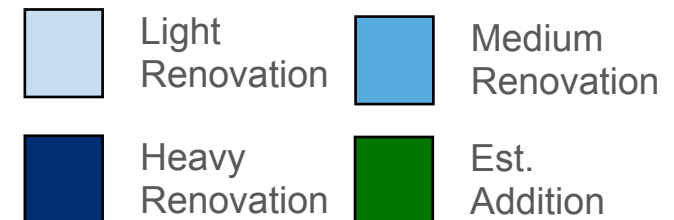
Crow Island: K-3 Future Ready Test Fit

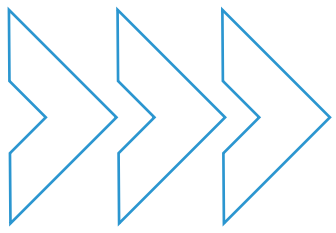
	K-3 Future Ready RENOVATION TEST FIT	% of EXISTING
<i>Existing</i>	<i>66,725 sf</i>	
Light Reno	26,000 sf	39%
Medium Reno	14,000 sf	21%
Heavy Reno	10,300 sf	15%
<i>Total Reno</i>	<i>50,300 sf</i>	<i>75%</i>
Addition	7,700 sf	12%
<i>Total Size</i>	<i>74,425 sf</i>	<i>112%</i>



Notes:

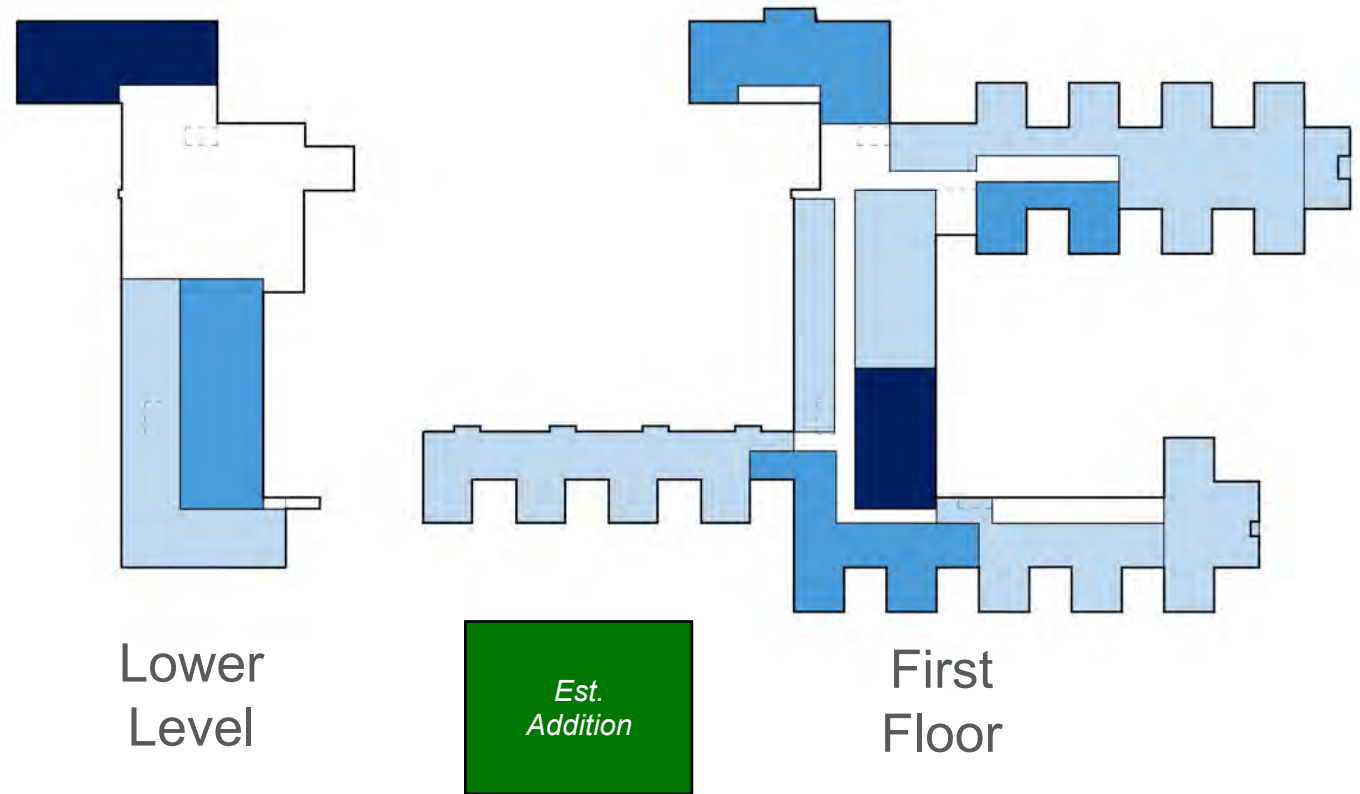
1. Test Fits illustrate one way to accommodate the anticipated spaces within the existing building; other permutations are possible.
2. The Activity Based Program Model is a master planning tool and is subject to change if any of the input variables change. Once a design process occurs, detailed programming and design will occur.





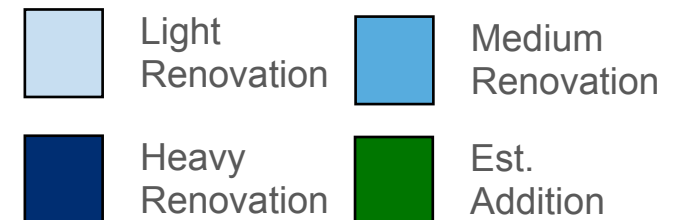
Crow Island: K-4 Future Ready Test Fit

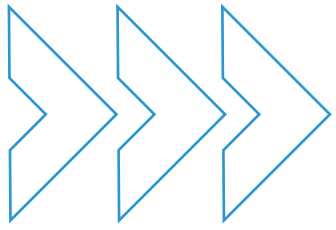
	K-4 Future Ready RENOVATION TEST FIT	% of EXISTING
<i>Existing</i>	<i>66,725 sf</i>	
Light Reno	29,000 sf	43%
Medium Reno	14,000 sf	21%
Heavy Reno	7,500 sf	11%
<i>Total Reno</i>	<i>50,500 sf</i>	<i>75%</i>
Addition	12,000 sf	18%
<i>Total Size</i>	<i>78,725 sf</i>	<i>118%</i>



Notes:

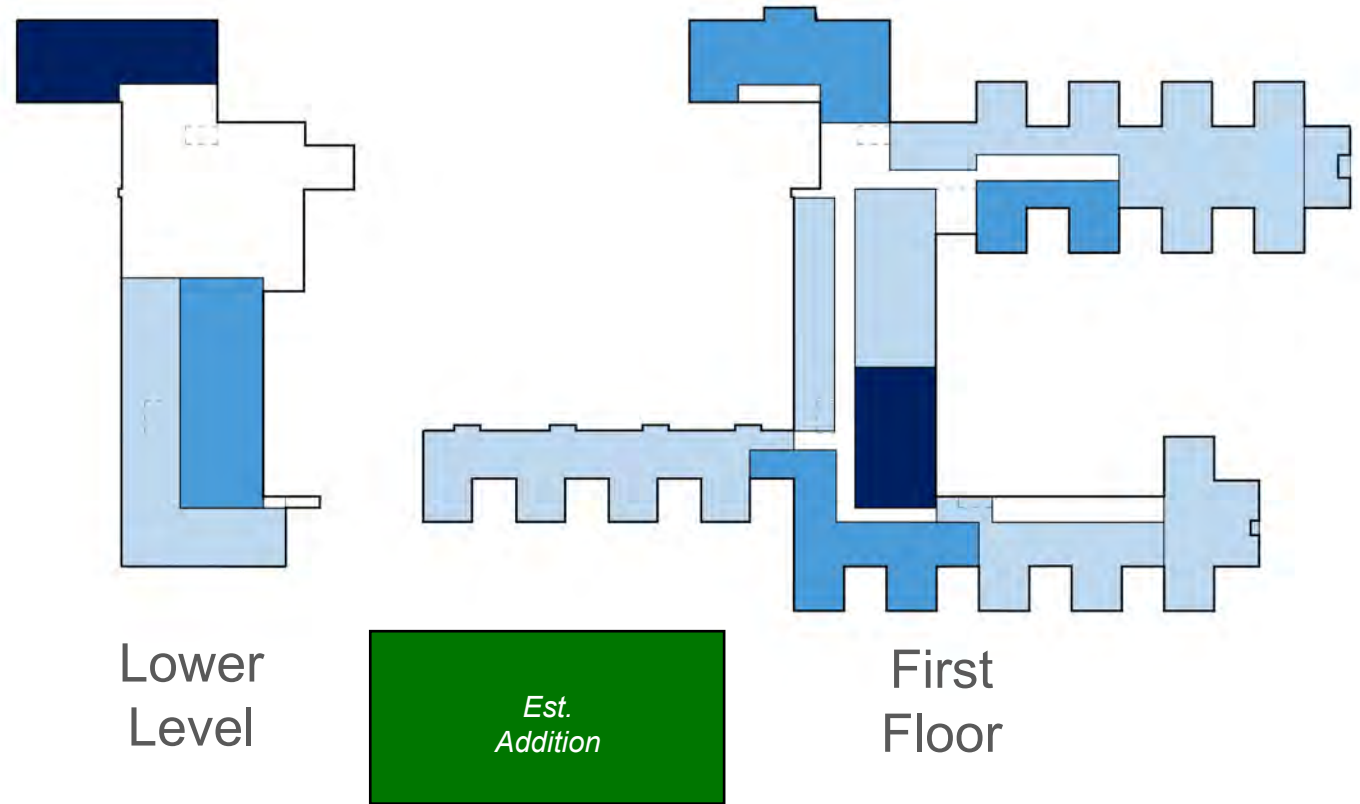
1. Test Fits illustrate one way to accommodate the anticipated spaces within the existing building; other permutations are possible.
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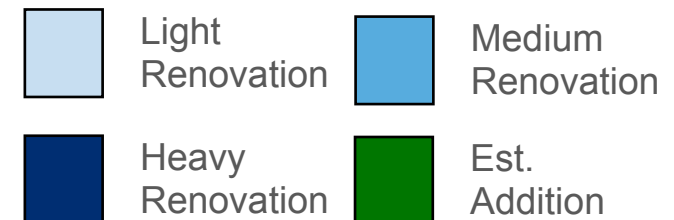
Crow Island: K-5 Future Ready Test Fit

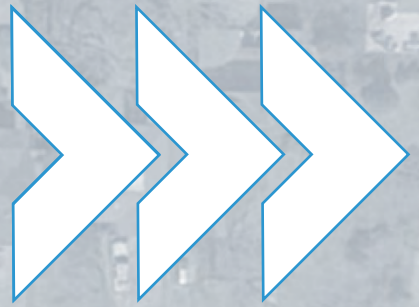
	K-5 Future Ready RENOVATION TEST FIT	% of EXISTING
<i>Existing</i>	<i>66,725 sf</i>	
Light Reno	29,000 sf	43%
Medium Reno	14,000 sf	21%
Heavy Reno	7,500 sf	11%
<i>Total Reno</i>	<i>50,500 sf</i>	<i>75%</i>
Addition	18,000 sf	27%
<i>Total Size</i>	<i>84,750 sf</i>	<i>127%</i>



Notes:

1. Test Fits illustrate one way to accommodate the anticipated spaces within the existing building; other permutations are possible.
2. The Activity Based Program Model is a master planning tool and is subject to change if any of the input variables change. Once a design process occurs, detailed programming and design will occur.





Greeley at a Glance



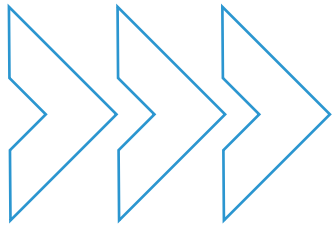
Year Built: 1913 (105 years old)

Property Area: 116,159 sf

**Building Area: 68,277 sf
(out of 28,532 sf allowed by FAR)**

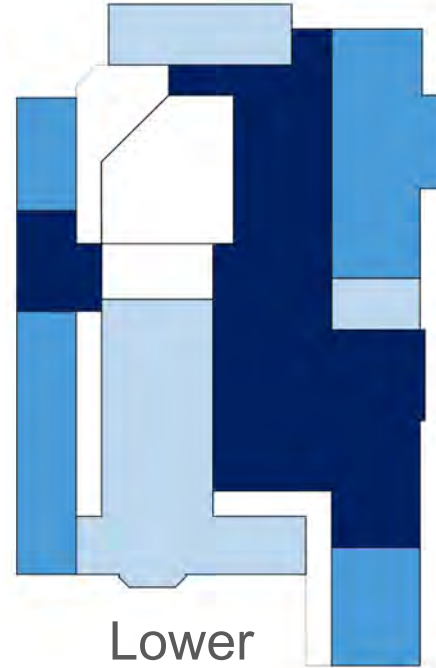
**Impervious Area: 85,141 sf
(of 58,080 sf allowed)**

Expansion would require Zoning Variances to be approved prior to construction.

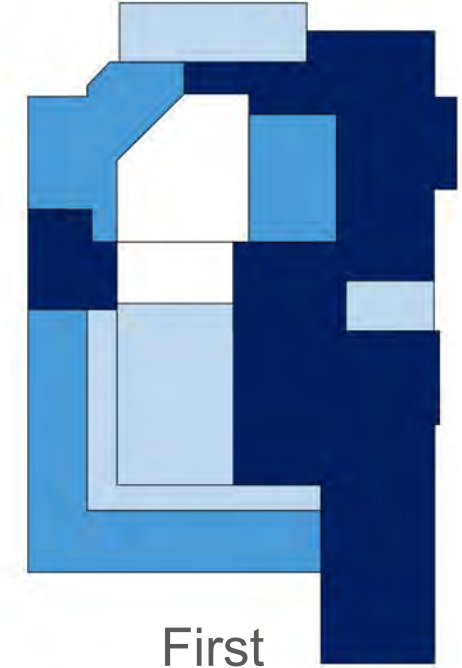


Greely: K-3 Future Ready Test Fit

	K-3 + FR RENOVATION TEST FIT	% of EXISTING
<i>Existing</i>	<i>68,277 sf</i>	
Light Reno	10,500 sf	15%
Medium Reno	17,000 sf	25%
Heavy Reno	27,000 sf	39%
<i>Total Reno</i>	<i>54,500 sf</i>	<i>79%</i>
Addition	Not Required	0%
<i>Total Size</i>	<i>68,277 sf</i>	<i>100%</i>



Lower
Level



First
Floor

Notes:

1. Test Fits illustrate one way to accommodate the anticipated spaces within the existing building; other permutations are possible.
2. The Activity Based Program Model is a master planning tool and is subject to change if any of the input variables change. Once a design process occurs, detailed programming and design will occur.



Light
Renovation



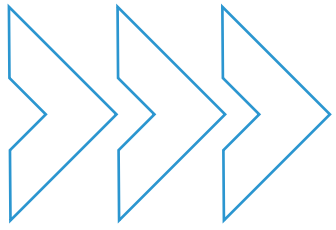
Medium
Renovation



Heavy
Renovation

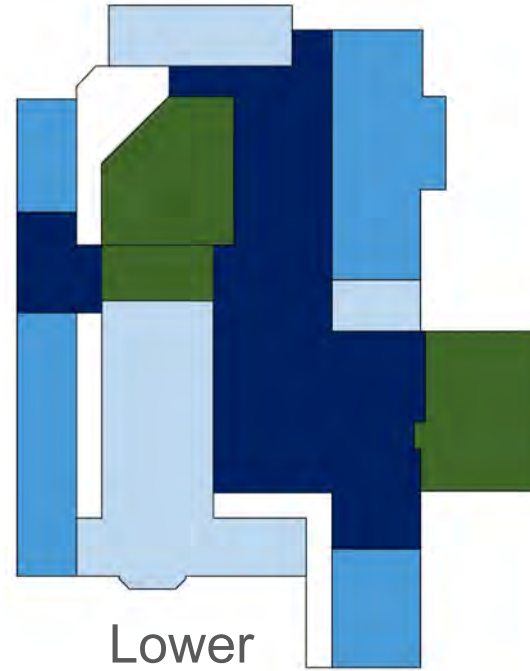


Addition

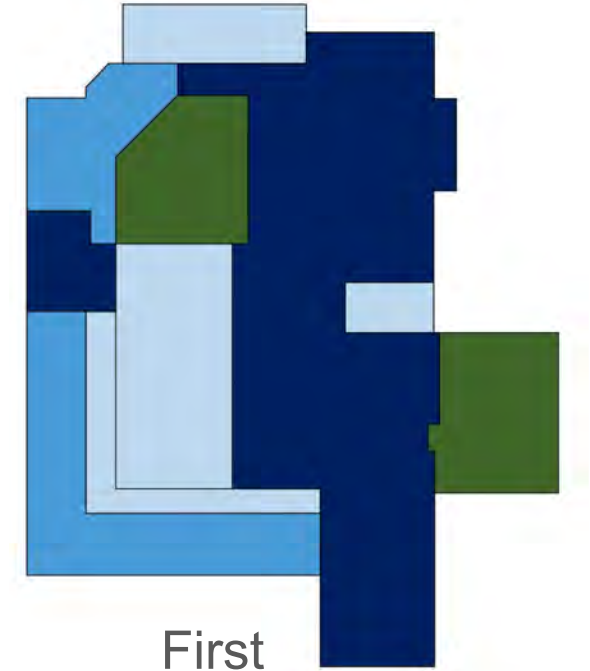


Greely: K-4 Future Ready Test Fit

	K-4 + FR RENOVATION TEST FIT	% of EXISTING
<i>Existing</i>	<i>68,277 sf</i>	
Light Reno	12,000 sf	17%
Medium Reno	15,000 sf	22%
Heavy Reno	29,000 sf	44%
<i>Total Reno</i>	<i>56,000 sf</i>	<i>83%</i>
Addition	6,500 sf	10%
<i>Total Size</i>	<i>74,777 sf</i>	<i>110%</i>



Lower
Level



First
Floor

Notes:

1. Test Fits illustrate one way to accommodate the anticipated spaces within the existing building; other permutations are possible.
2. The Activity Based Program Model is a master planning tool and is subject to change if any of the input variables change. Once a design process occurs, detailed programming and design will occur.



Light
Renovation



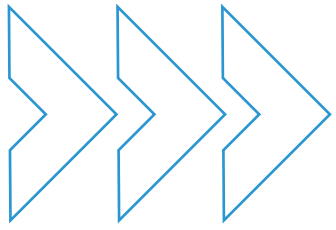
Medium
Renovation



Heavy
Renovation

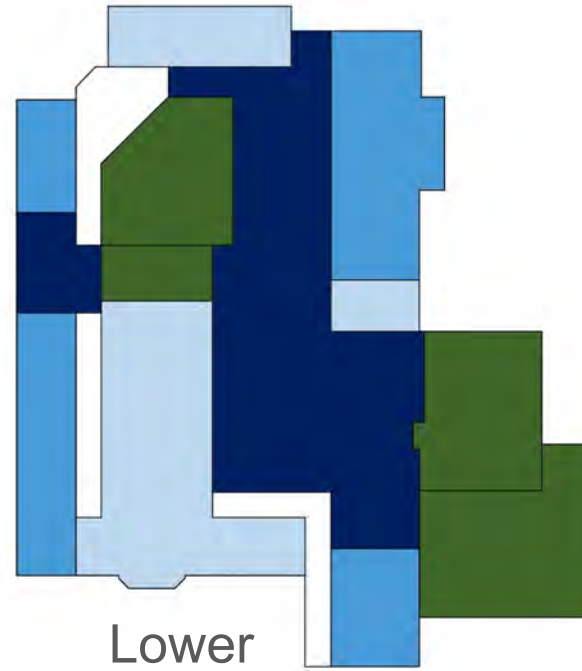


Addition

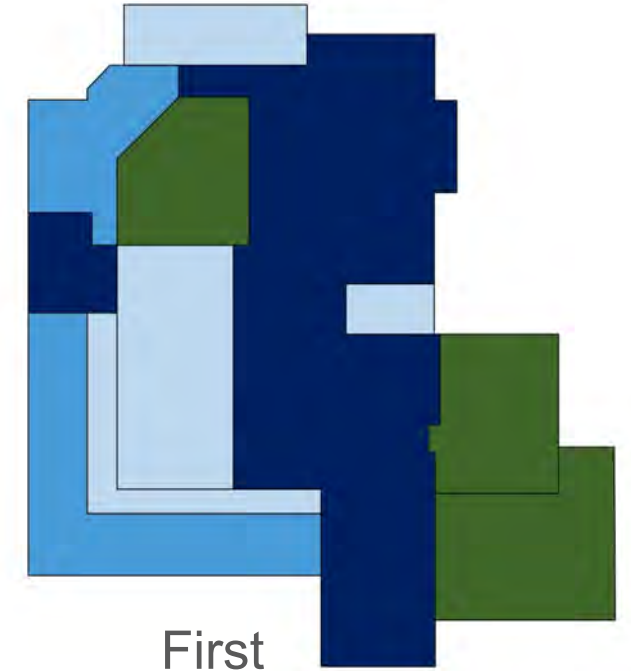


Greely: K-5 Future Ready Test Fit

	K-5 + FR RENOVATION TEST FIT	% of EXISTING
<i>Existing</i>	<i>68,277 sf</i>	
Light Reno	12,000 sf	17%
Medium Reno	15,000 sf	22%
Heavy Reno	29,000 sf	44%
<i>Total Reno</i>	<i>56,000 sf</i>	<i>83%</i>
Addition	13,575 sf	20%
<i>Total Size</i>	<i>81,852 sf</i>	<i>120%</i>



Lower
Level



First
Floor

Notes:

1. Test Fits illustrate one way to accommodate the anticipated spaces within the existing building; other permutations are possible.
2. The Activity Based Program Model is a master planning tool and is subject to change if any of the input variables change. Once a design process occurs, detailed programming and design will occur.



Light
Renovation



Medium
Renovation



Heavy
Renovation



Addition



Hubbard Woods at a Glance

Year Built: 1918 (100 years old)

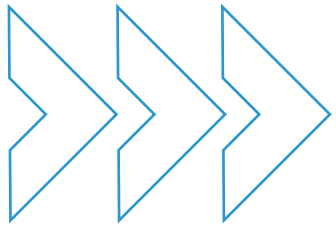
Property Area: 125,560 sf

Building Area: 53,491 sf
(out of 30,694 sf allowed by FAR)

Impervious Area: 87,025 sf
(of 62,780 sf allowed)

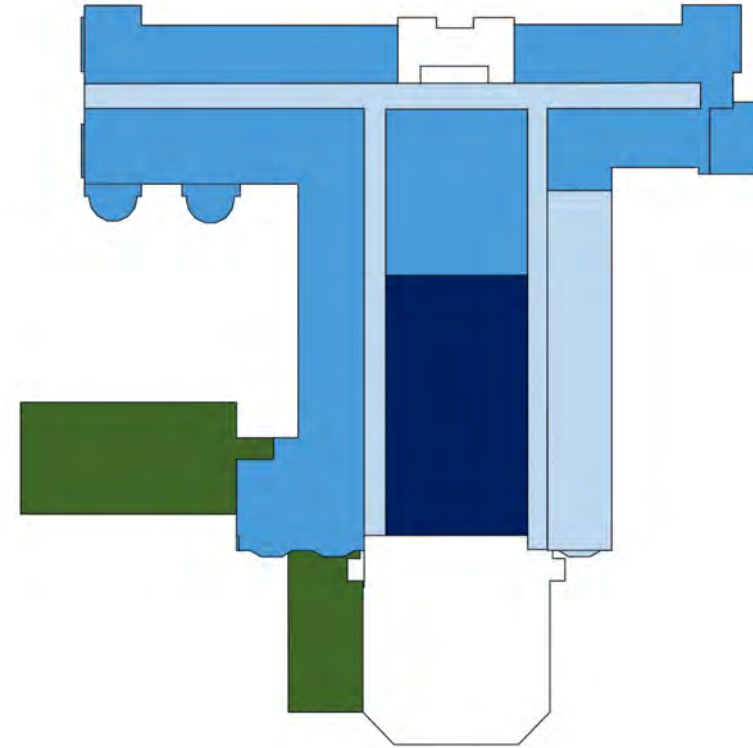
Expansion would require Zoning Variances to be approved prior to construction.





Hubbard Woods: K-3 Future Ready Test Fit

	K-3 + FR RENOVATION TEST FIT	% of EXISTING
<i>Existing</i>	<i>53,491 sf</i>	
Light Reno	6,500 sf	12%
Medium Reno	20,000 sf	37%
Heavy Reno	12,000 sf	23%
<i>Total Reno</i>	<i>38,500 sf</i>	<i>72%</i>
Addition	5,095 sf	10%
<i>Total Size</i>	<i>58,586 sf</i>	<i>110%</i>



Notes:

1. Test Fits illustrate one way to accommodate the anticipated spaces within the existing building; other permutations are possible.
2. The Activity Based Program Model is a master planning tool and is subject to change if any of the input variables change. Once a design process occurs, detailed programming and design will occur.



Light
Renovation



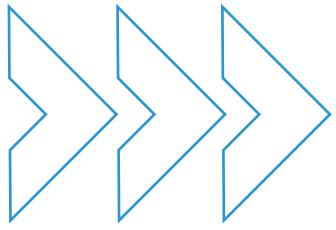
Medium
Renovation



Heavy
Renovation

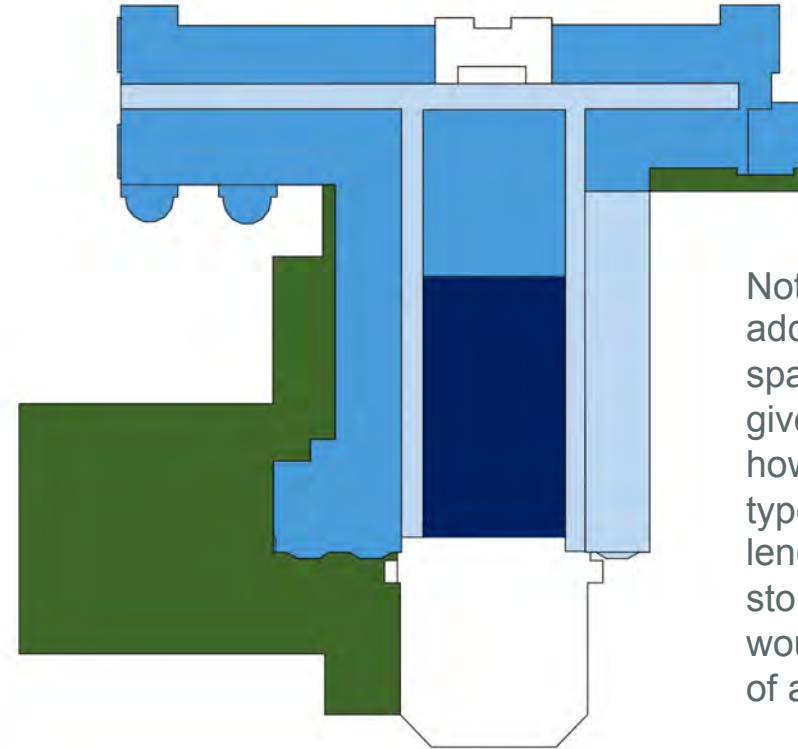


Addition



Hubbard Woods: K-4 Future Ready Test Fit

	K-4 + FR RENOVATION TEST FIT	% of EXISTING
<i>Existing</i>	<i>53,491 sf</i>	
Light Reno	6,500 sf	12%
Medium Reno	20,000 sf	37%
Heavy Reno	12,000 sf	23%
<i>Total Reno</i>	<i>38,500 sf</i>	<i>72%</i>
Addition	15,650 sf	29%
<i>Total Size</i>	<i>69,141 sf</i>	<i>129%</i>



Note: The size of the estimated addition would limit outdoor space. Consideration was given to two story construction, however some of the space types in the addition do not lend themselves to having two stories. An example of this would be the planned inclusion of a Cafeteria.

Notes:

1. Test Fits illustrate one way to accommodate the anticipated spaces within the existing building; other permutations are possible.
2. The Activity Based Program Model is a master planning tool and is subject to change if any of the input variables change. Once a design process occurs, detailed programming and design will occur.



Light
Renovation



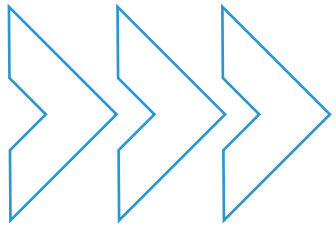
Medium
Renovation



Heavy
Renovation

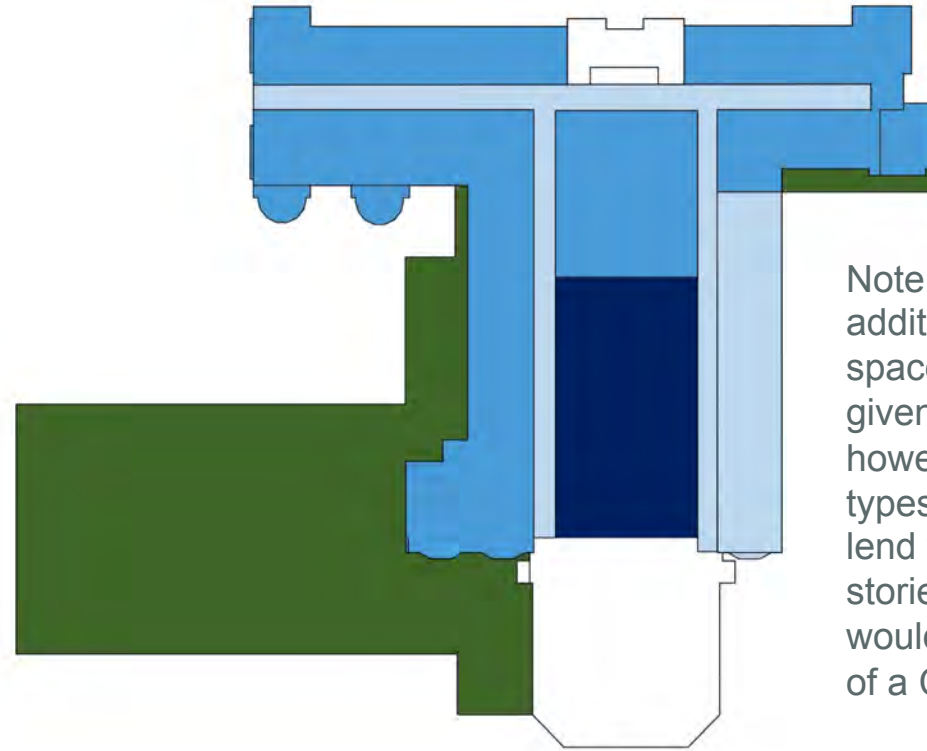


Addition



Hubbard Woods: K-5 Future Ready Test Fit

	K-5 + FR RENOVATION TEST FIT	% of EXISTING
<i>Existing</i>	<i>53,491 sf</i>	
Light Reno	6,500 sf	12%
Medium Reno	20,000 sf	37%
Heavy Reno	12,000 sf	23%
<i>Total Reno</i>	<i>38,500 sf</i>	<i>72%</i>
Addition	22,600 sf	41%
<i>Total Size</i>	<i>76,091 sf</i>	<i>141%</i>



Note: The size of the estimated addition would limit outdoor space. Consideration was given to two story construction, however some of the space types in the addition do not lend themselves to having two stories. An example of this would be the planned inclusion of a Cafeteria.

Notes:

1. Test Fits illustrate one way to accommodate the anticipated spaces within the existing building; other permutations are possible.
2. The Activity Based Program Model is a master planning tool and is subject to change if any of the input variables change. Once a design process occurs, detailed programming and design will occur.



Light
Renovation



Medium
Renovation



Heavy
Renovation



Addition



Washburne at a Glance

Year Built: 1967 (51 years old)

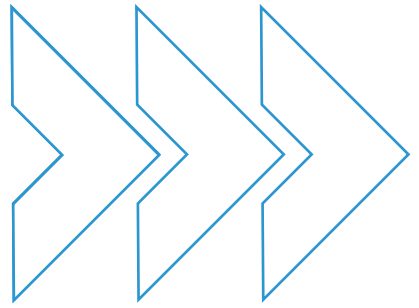
Property Area: 273,560 SF

Building Area: 155,032 SF
(out of 64,669 SF allowed by FAR)

Roof Coverage: 80,429 SF
(of 73,785 SF allowed)

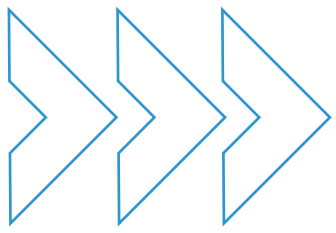
Expansion would require Zoning
Variances to be approved prior to





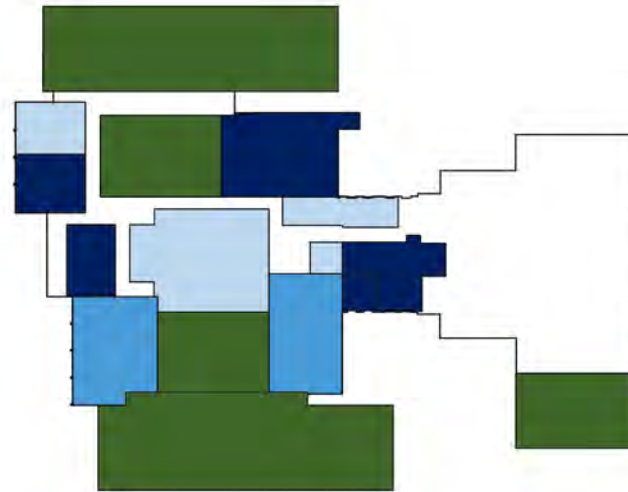
Washburne: Test Fits

	ENHANCE (4-8 + FR) RENOVATION TEST FIT	% of EXISTING	MAINTAIN (5-8 + FR) RENOVATION TEST FIT	% of EXISTING	6-8 + FR (K-5 + FR) RENOVATION TEST FIT	% of EXISTING
<i>Existing</i>	155,032 sf		155,032 sf		155,032 sf	
Light Reno	34,500 sf	22%	34,500 sf	22%	33,000 sf	21%
Medium Reno	10,000 sf	7%	41,000 sf	27%	37,000 sf	24%
Heavy Reno	28,500 sf	18%	25,500 sf	17%	23,000 sf	15%
Total Reno	73,000 sf	47%	101,000 sf	65%	93,000 sf	60%
Demo	28,000 sf	-18%			4,700 sf	-3%
Addition	74,000 sf	48%	10,750 sf	7%	Not Required	0%
<i>Total FR Size</i>	201,032 sf	130%	165,782 sf	107%	150,332 sf	97%

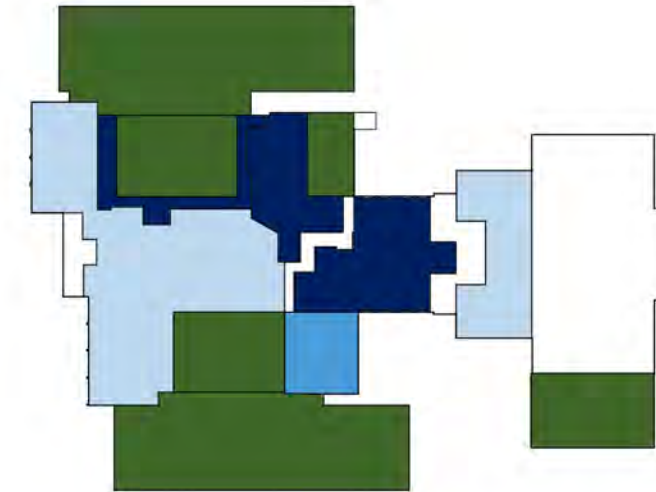


Washburne: 4-8 Future Ready Test Fit

	ENHANCE (4-8 + FR) RENOVATION TEST FIT	% of EXISTING
<i>Existing</i>	<i>155,032 sf</i>	
Light Reno	34,500 sf	22%
Medium Reno	10,000 sf	7%
Heavy Reno	28,500 sf	18%
<i>Total Reno</i>	<i>73,000 sf</i>	<i>47%</i>
Addition	74,000 sf	48%
<i>Total Size</i>	<i>201,032 sf</i>	<i>130%</i>



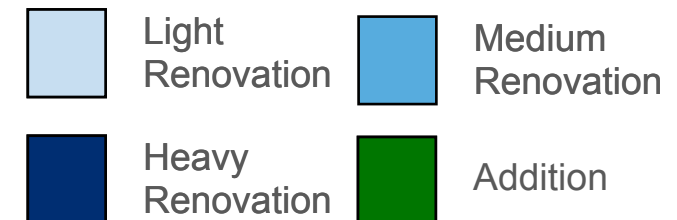
Level 1

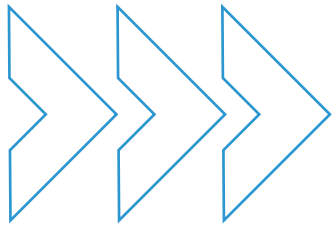


Level 2

Notes:

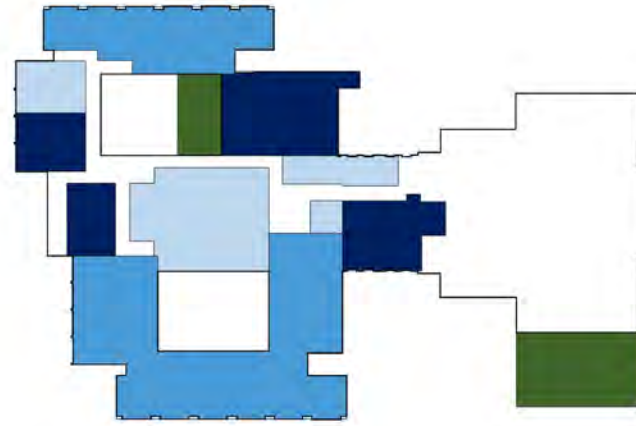
1. Test Fits illustrate one way to accommodate the anticipated spaces within the existing building; other permutations are possible.
2. The Activity Based Program Model is a master planning tool and is subject to change if any of the input variables change. Once a design process occurs, detailed programming and design will occur.



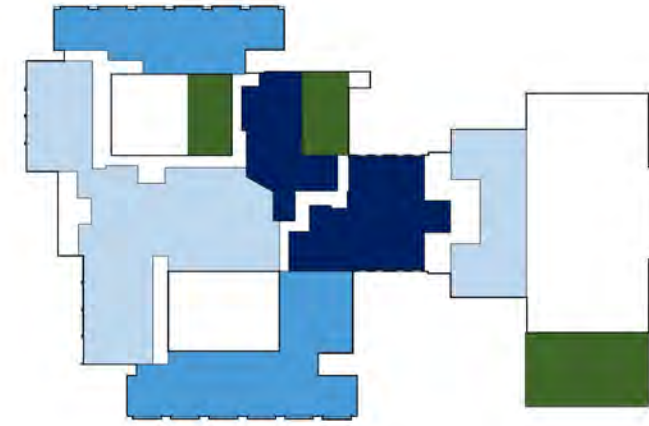


Washburne: 5-8 Future Ready Test Fit

	MAINTAIN (5-8 + FR) RENOVATION TEST FIT	% of EXISTING
<i>Existing</i>	<i>155,032 sf</i>	
Light Reno	34,500 sf	22%
Medium Reno	41,000 sf	27%
Heavy Reno	25,500 sf	17%
<i>Total Reno</i>	<i>101,000 sf</i>	<i>65%</i>
Addition	10,750 sf	7%
<i>Total Size</i>	<i>165,782 sf</i>	<i>107%</i>



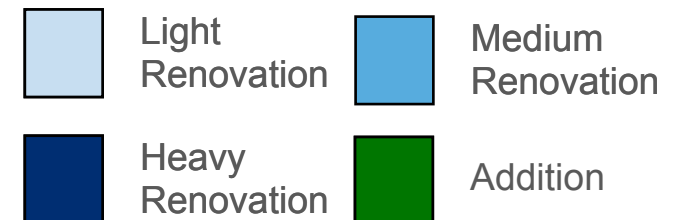
Level 1

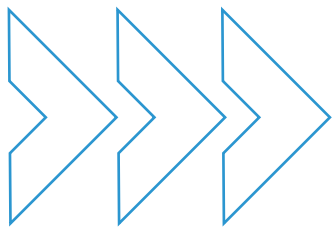


Level 2

Notes:

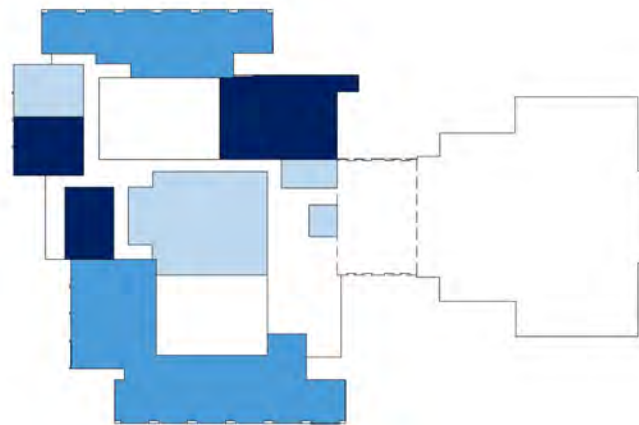
1. Test Fits illustrate one way to accommodate the anticipated spaces within the existing building; other permutations are possible.
2. The Activity Based Program Model is a master planning tool and is subject to change if any of the input variables change. Once a design process occurs, detailed programming and design will occur.



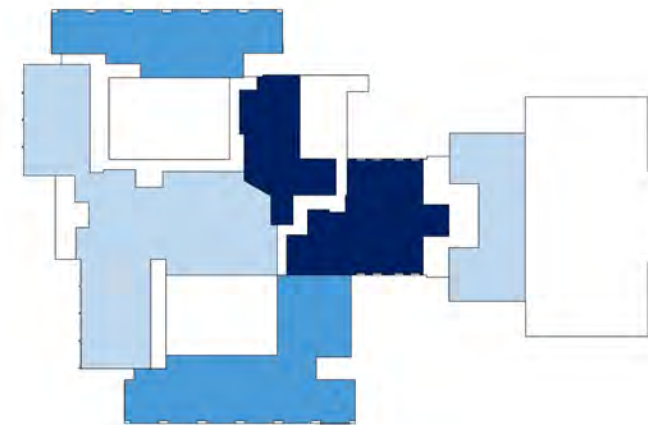


Washburne: 6-8 Future Ready Test Fit

	MAINTAIN (5-8 + FR) RENOVATION TEST FIT	% of EXISTING
<i>Existing</i>	<i>155,032 sf</i>	
Light Reno	33,000 sf	21%
Medium Reno	37,000 sf	24%
Heavy Reno	23,000 sf	15%
<i>Total Reno</i>	<i>93,000 sf</i>	<i>60%</i>
Addition	Not Required	0%
<i>Total Size</i>	<i>150,332 sf</i>	<i>97%</i>



Level 1



Level 2

Notes:

1. Test Fits illustrate one way to accommodate the anticipated spaces within the existing building; other permutations are possible.
2. The Activity Based Program Model is a master planning tool and is subject to change if any of the input variables change. Once a design process occurs, detailed programming and design will occur.



Light
Renovation



Medium
Renovation



Heavy
Renovation

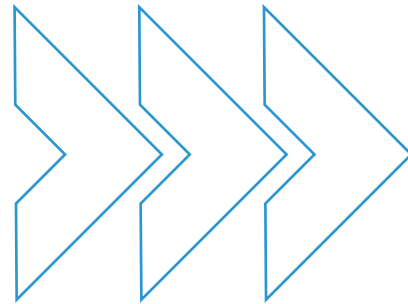


Addition

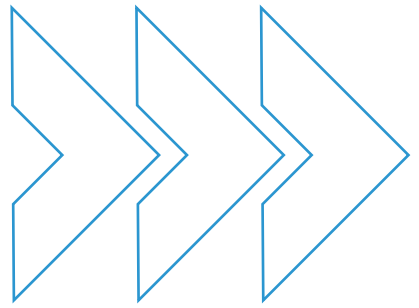


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Planning our future.



Energy Modeling



Energy Modeling Process

...the steps taken to create energy model

- Geometry - Create 3D Representation of Building in <IES VE> modeling software
- Occupancy – Density and hours based on current
- Envelope - Replicate thermal performance of existing building thermal imaging results
- HVAC – Select options based on Ameresco recommendations

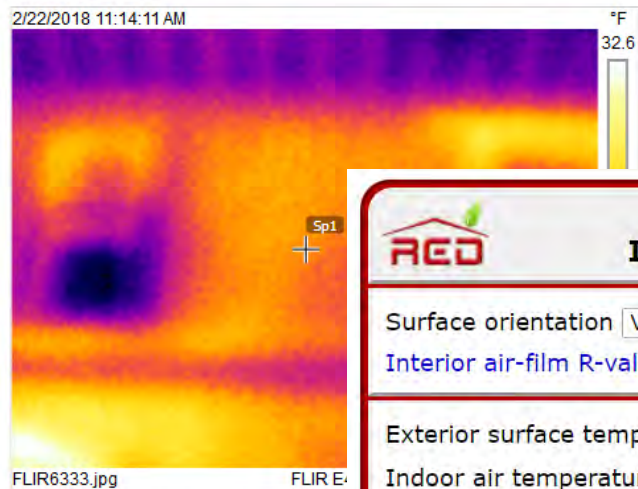
Note: The energy modeling was used as a cost basis for energy consumption and the estimation of concepts. Should the HVAC system choices or the sizes/number of the buildings being operated change, the related energy models should be updated.

Thermal Imaging to Inform Assumptions

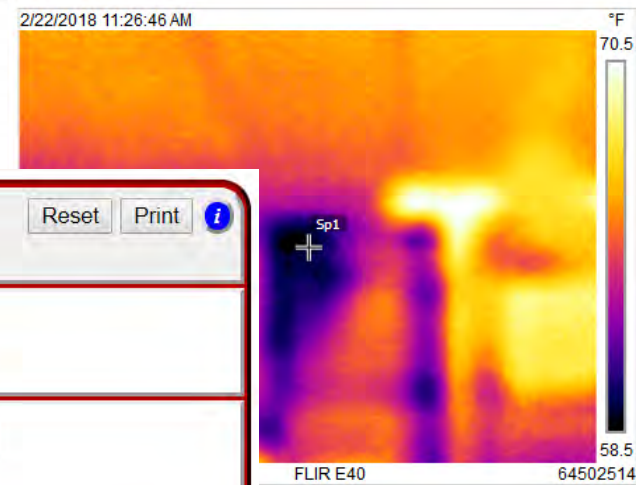


Winnetka District 36 - Greeley School

Measurements	
Sp1	25.4 °F
Parameters	
Emissivity	0.81
Refl. temp.	84 °F



Measurements	
Sp1	58.9 °F
Parameters	
Emissivity	0.81
Refl. temp.	84 °F





Infrared R-Value

Reset Print 

Surface orientation Vertical

Interior air-film R-value [$^{\circ}\text{F}\cdot\text{ft}^2\cdot\text{h}/\text{Btu}$] = 0.68

Exterior surface temperature [$^{\circ}\text{F}$] 25

Indoor air temperature [$^{\circ}\text{F}$] 70

☐ Interior surface temperature [$^{\circ}\text{F}$] 58

☒ R-Value [$^{\circ}\text{F}\cdot\text{ft}^2\cdot\text{h}/\text{Btu}$] = 1.87

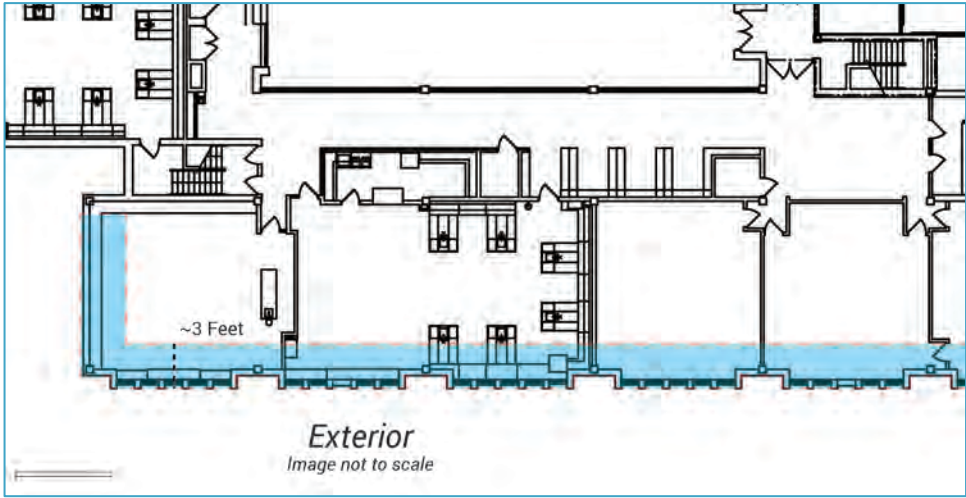
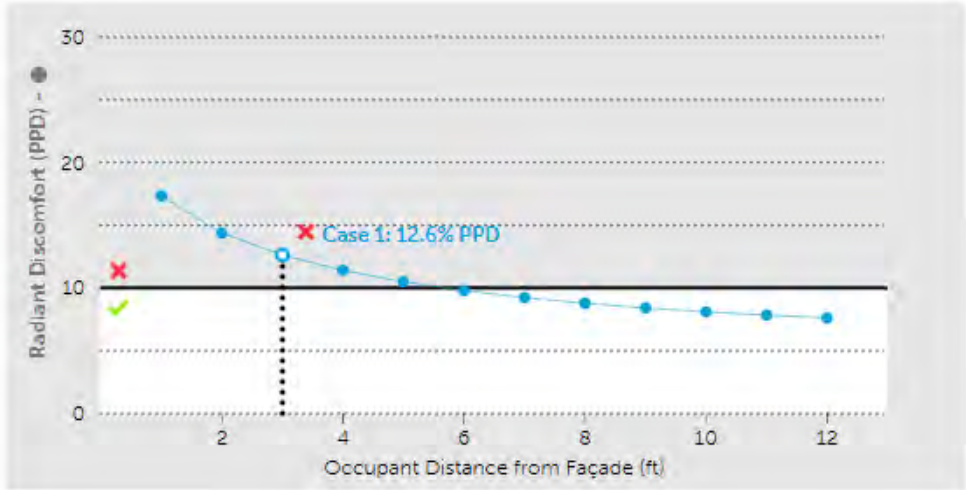
Version 2016-07-06_01:30 © 2016 Residential Energy Dynamics, LLC

R-value is the capacity of an insulating material to **resist heat flow**.

The **higher** the R-value, the **greater** the insulating power.

Modeling Assumptions: Greeley

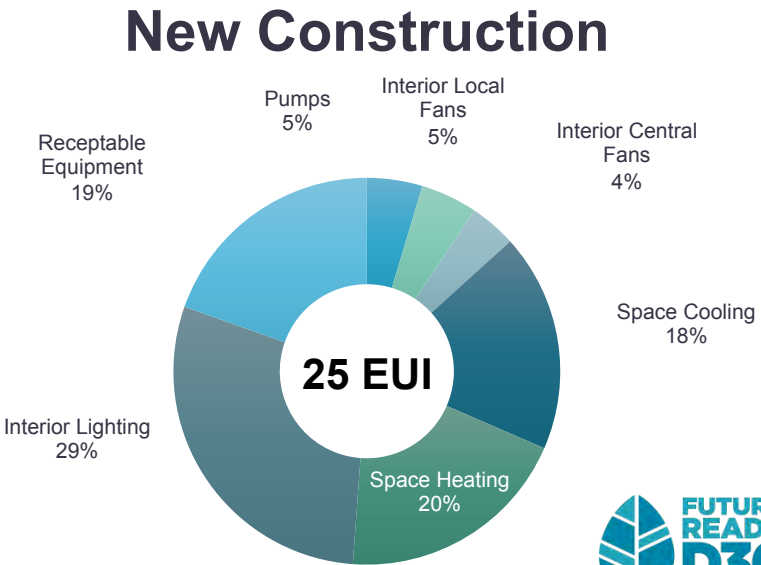
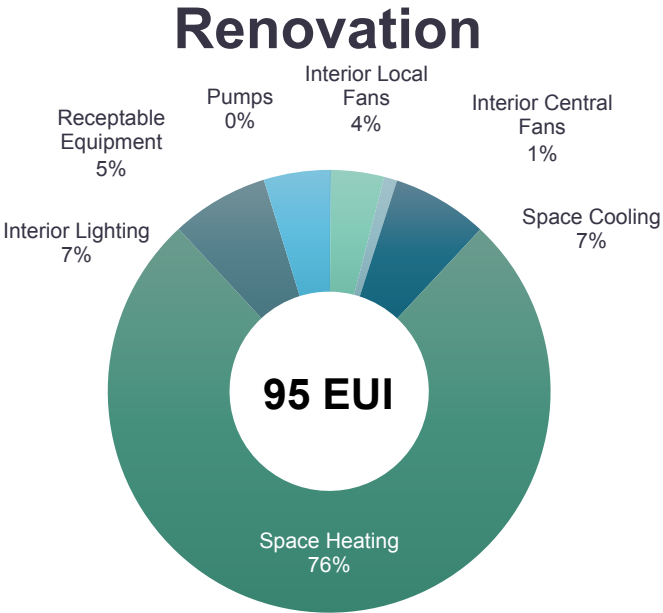
Envelope Performance	Existing Building	Required by Code	Unit of Measure
Wall R-Value	1.9	12.0	ft2.h.F/Btu
Roof R-Value	10.0	35.0	ft2.h.F/Btu
Glazing U-Value	1.0	0.5	Btu/h.ft2.F
Glazing Solar Heat Gain Coefficient (SHGC)	0.5	0.4	-
Glazing Visible Light Transmittance (VLT)	0.8	0.8	-
Window to Wall Ratio	13.0	13.0	%
Air-tightness	0.3	0.2	cfm/ft²Facade
Additional Assumptions Lighting: All LED Used in Model: HVAC Options: DOAS with Heat Pumps, Geothermal			



Example of a ~3' radiant zone

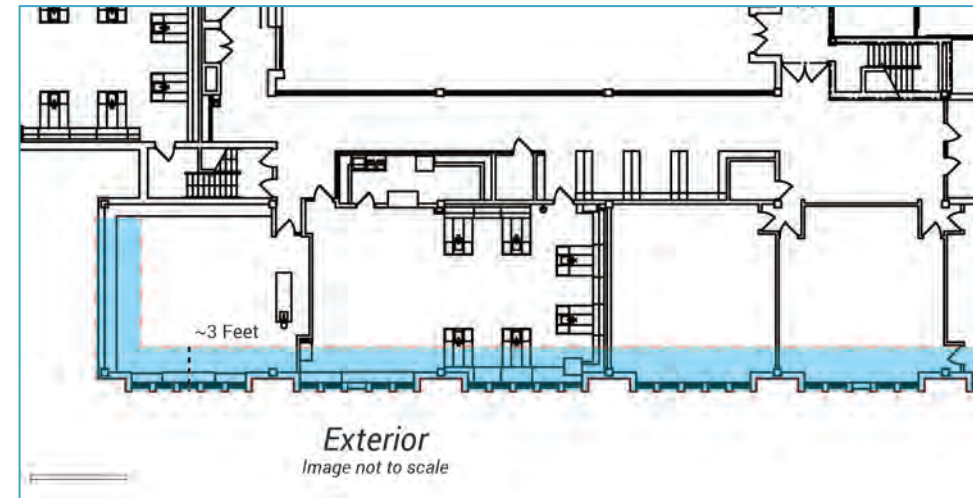
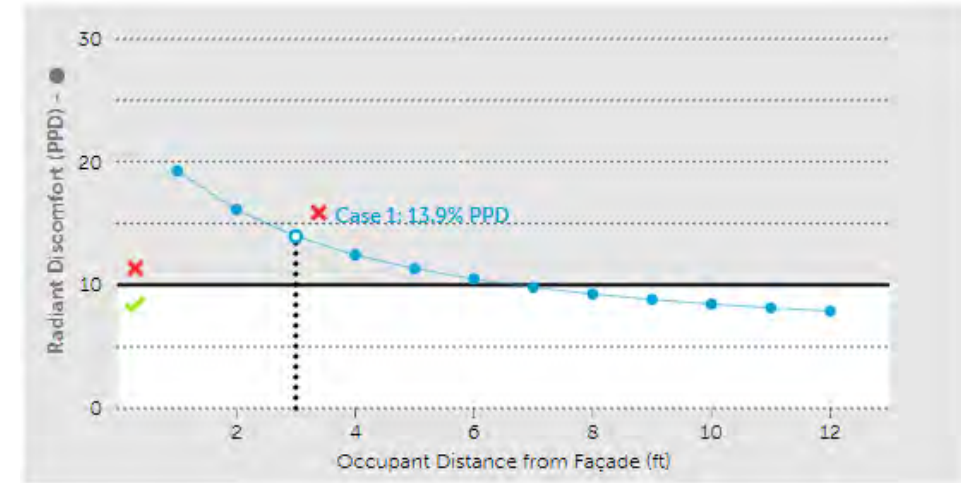
Modeling Results: Greeley School

	EUI	Cost/SF	Potential Savings v Existing
Existing	85	\$ 1.09	-
Old Building, New HVAC	95	\$ 1.78	-27%
Old Building, New HVAC, Geothermal	45	\$ 1.58	-12%
Improved Building, New HVAC	34	\$ 0.89	37%
Improved Building, New HVAC, Geothermal	25	\$ 0.87	38%
All New (Typical)	35	\$ 0.76	30%



Modeling Assumptions: Carleton Washburne

Envelope Performance	Existing Building	Required by Code	Unit of Measure
Wall R-Value	1.5	12.0	ft ² .h.F/Btu
Roof R-Value	10.0	20.0	ft ² .h.F/Btu
Glazing U-Value	1.0	0.5	Btu/h.ft ² .F
Glazing Solar Heat Gain Coefficient (SHGC)	0.5	0.4	-
Glazing Visible Light Transmittance (VLT)	0.8	0.8	-
Window to Wall Ratio	10.0	10.0	%
Air-tightness	0.3	0.2	cfm/ft ² Facade
Additional Assumptions Lighting: All LED Used in Model: HVAC Options: DOAS with Heat Pumps, Geothermal			

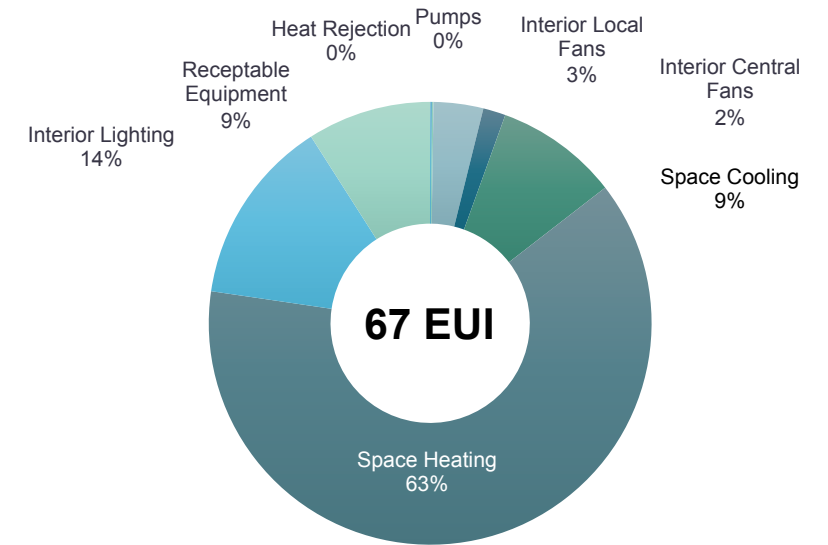


Example of a ~3' radiant zone

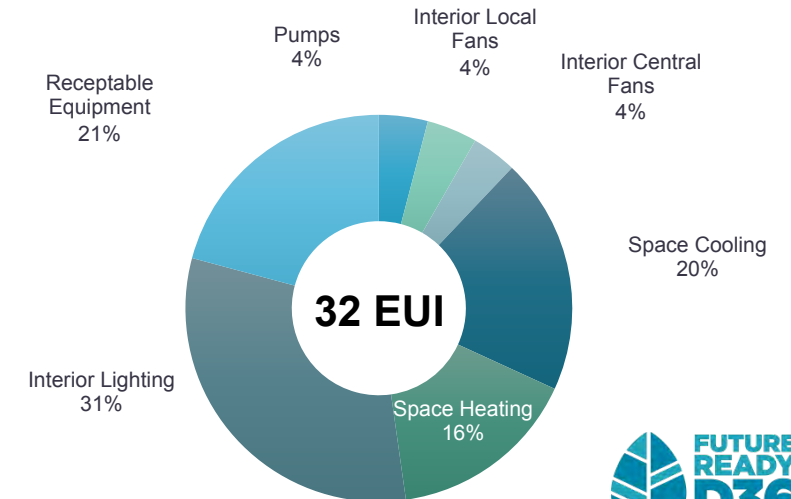
Modeling Results: Carleton Washburne

	EUI	Cost/SF	Potential Savings v Existing
Existing	85	\$ 1.41	-
Old Building, New HVAC	67	\$ 1.50	-7%
Old Building, New HVAC, Geothermal	40	\$ 1.42	-1%
Improved Building, New HVAC	42	\$ 1.14	19%
Improved Building, New HVAC, Geothermal	32	\$ 1.13	20%
All New (Typical)	35	\$ 0.76	32%

Renovation



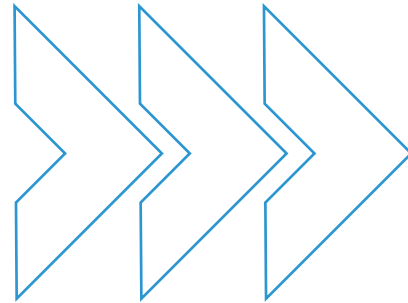
New Construction



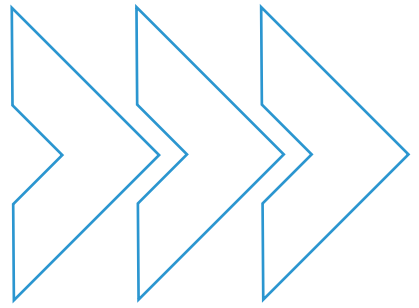


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Operations & Maintenance



Baseline: District-Wide Historical O&M Expenses

	2012-2013	2013-2014	2014-2015	2015-2016	2016-2017	D36 Total
Custodial Supplies	\$55,928	\$63,034	\$76,315	\$81,089	\$64,381	\$340,747
Maintenance Supplies	\$74,785	\$78,642	\$95,531	\$99,837	\$104,039	\$453,834
Contractual Repairs	\$512,980	\$478,501	\$497,215	\$509,912	\$343,485	\$2,342,093
Capital Equipment	\$24,695	\$103,838	\$95,346	\$158,886	\$141,086	\$523,851
Non-Capital Equipment	\$52,554	\$36,324	\$30,815	\$12,030	\$42,128	\$173,851
D36 Annual Sub-Total	\$720,942	\$760,339	\$796,222	\$861,754	\$695,119	\$3,834,376

Cost/Square Foot ~\$1.61/sf ~\$1.69/sf ~\$1.77/sf ~\$1.92/sf **~\$1.55/sf***

Average ~\$1.72/sf over 5 years

*District O&M costs have fluctuated due to various purchasing needs and staffing. After reviewing O&M costs the Core Team, District Administration and Ameresco, it was deemed most appropriate to use 2016-2017 costs per square foot: ~\$1.55/SF as our cost basis for existing facilities. This is partially due to the District's hiring of more skilled labor vs. previous years where more work was outsourced.