Process Plan

An Early College High School Model for Pittsburgh

Bismaad Minhas, Caitlin Blair, Deme Yoo, Iman Mouzlam, Tyler Gund

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This document was completed as part of a Systems Synthesis Project at Carnegie Mellon University's Heinz College. A team of five second-year MSPPM and MAM students worked on this project in the Fall of 2016. This project was commissioned by the Pittsburgh Promise to look into the feasibility and design of an early-college high school model for Pittsburgh. Pittsburgh Public Schools did not commission, participate in, endorse or contribute to the development of this plan. The Systems Team utilized resources including publicly available information, interviews with key stakeholders, secondary sources, and information from the Pittsburgh Promise in the formulation of this document. Assumptions have been made and documented in each section. This document is meant to serve as a tool-kit to for a future project team and as such, these documents have been marked as draft. For any questions, contact Sam Franklin at sfrankli@andrew.cmu.edu.

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Implementation Approach

The Pittsburgh Promise approached the H. John Heinz III School of Public Policy and Management to complete the initial design and planning phase in the creation of an early college high school with a career preparatory focus. Opening a new school in a way that positions it for success is a large and resource-intensive process - one that is too often rushed and/or underinvested in. This Process Plan describes a four-phase implementation path (Planning and Design - Implementation - Opening - Operating) that would open the school for the 2019-20 school year (August 2019), and grow it to capacity over six years. Therefore, with the exception of students following an accelerated pathway, the first cohort of students would complete their associate degrees in 2025.

The total cost of starting and operating the school over these eight years is expected to be about $23,837,049. Of this, about $13,500,000 would be covered by district per-pupil funding and $1,057,950 would be covered by Pittsburgh Promise Scholarships, leaving $9,279,099 in costs to be covered by a combination of district and private funds mostly dedicated to programmatic start-up costs. This includes up to $858,202 in short-term costs over two years to get the project off the ground. These costs do not include any projection related to a facility renovation. Further details on the total cost figures are in the Budget section.

To implement the plan, the District Board of Directors should secure a start-up grant to begin implementation work by June 2017, and assemble a project team of at least three members to start implementation.

In addition to describing the process of opening the Academy, this plan also lays out critical information related to the capacity that would be needed to open the school, the cost of the project, risks and barriers, an approach to evaluating success, and other essential information necessary to take the school from an idea to an Academy preparing hundreds of students for success in the regional economy.

The purpose of this document is not only to lay out one path to opening the Academy. It is to serve as a dynamic tool for the project team that would bring such a plan to fruition. The content should be viewed as a framework that would need to be further developed, updated, and go through numerous iterations and additional levels of detail as the project progressed.

Timeline

An ideal start-date of 2019 may seem surprisingly far away, making the timeline appear not aggressive enough for something that addresses such an urgent need. But it will become clear in reviewing this document why this timeline puts the school on the best course to long-term success and sustainability. Even in this scenario, aggressive action would need to be taken to ensure that the school opens having attracted the right students and families, engaged a broad coalition of partners and experts in its design, hired the right staff, raised enough start-up funds, adequately prepared the facility, developed the curriculum, and all of the many other tasks necessary to put a school like this on the right trajectory.

Figure 1. A four-phase process, implemented over eight years, would take the school from an idea to a fully enrolled institution graduating its first class of scholars with Associate Degrees and high school diplomas.

Phase 1 – Planning and Design (July – December 2016)

Two graduate-level researchers from Heinz College, Carnegie Mellon University, worked at the Promise during the summer of 2016 and compiled a fact base through best practice research, engagement with community experts, and secondary literature review.

In fall 2016, three additional graduate-level researchers joined the project. Together, the Heinz team developed a toolkit for opening the school that included a program summary detailing the vision for the school and its unique design features, a process plan outlining the approach to opening the school, and a budget template and master schedule framework. The project team was supported by an advisory committee of community leaders from industry, non-profit organizations, the Community College of Allegheny County, the Energy Innovation Center, The Pittsburgh Promise, and more. This phase of the project was completed in December 2016.

Phase 2 – Implementation (January 2017 – December 2018)

Following the work of the Heinz team, and contingent on approval from the school district, the project will progress to the implementation phase. This phase will be divided into five sub-phases, each lasting about 6 months. Some of the significant milestones to be accomplished during this phase include:

- Securing **funding** for the implementation phase;
- **Staffing** a project team;
- Further **designing** the details of the school including developing the master schedule;
- **Gaining approval** of the school by the district's Board of Directors, including the allocation of start-up funds beyond the regular per pupil allocation until the school is at capacity;
- **Securing a location** for the school and (at minimum) starting the first phase of facility renovation;
- **Forming partnerships** with industry and academic institutions;
- **Beginning curriculum development** including developing the full course catalog while prioritizing the deeper design of unique 9th grade content;
- **Hiring** a school management team; and

- **Recruiting** the first class of students and families.

During this phase, curriculum design work would include engaging committees of experts, educators, and employers to map the curriculum pathways to the needs and opportunities of the regional workforce, as well as, working with district curriculum staff to tailor the current PPS core curriculum to the unique needs of the program. At the end of the implementation phase in **December of 2018**, students will apply for admission to this magnet school.

Phase 3 – Opening (January 2019 – August 2019)

The project will at this time transition to the opening phase, which will continue until the first batch of students join the Academy in August 2019. Significant milestones during this phase include:

- **Recruiting and hiring** 9th grade teachers and support staff
- **Onboarding and training** new staff members;
- **Orientating new students and families**; and
- **Teaching summer preparatory courses** to help specific students better prepare for success in the program.

Phase 4 – Operating (September 2019 – July 2025)

At the time of its opening, the school will comprise of 100 students enrolled in the 9th grade. As this cohort of students progresses through the program, additional grades will be introduced. By 2025, the school will reach maximum capacity, that is, it will have a total of 600 students enrolled in grades 9-14. During this time, unique work is still needed beyond what is required to operate a traditional school.

Additional Timeline Details

In light of the magnitude and scale of this project, the four phases will be further broken into sub-phases as shown in the figure below. The duration of each of the sub-phases will be about 6 months. The following section will highlight some of the crucial milestones within each of the sub-phases, while the subsequent figure will present a visual representation of the same. This level of detail is intended particularly to be useful to a project team charged with implementation.

Figure 2. The four-phase process for opening the school is broken down into 9 sub-phases in approximately

six month increments.

Phase 1 – Planning and Design (July – December 2016)

May-August 2016 (1.1)

Graduate students worked at the Pittsburgh promise during the summer and compiled a fact base through best practice research, engagement with community experts, and secondary literature review. They also created a toolkit with templates to guide future work.

September-December 2016 (1.1)

A team of graduate level researchers at Heinz College build on work completed during the initial exploration, and study the feasibility of an early college high school with a career preparatory focus in the Pittsburgh School District. Furthermore, the team provides recommendations and a plan detailing the future course of action should the initial analysis deem the proposal feasible.

Phase 2 – Implementation (January 2017 – December 2018)

January-June 2017 (2.1)

During this phase, grant money must be raised to support the implementation costs. At this point, this effort needs to be driven by the school district leadership and The Promise, as no full-time staff will yet be dedicated to the project. The Board of Directors must vote to accept the grant, develop and post job descriptions, and staff the project team.

By the end of this six-month period a dedicated project team on board who will begin their work in July. See the Organizational Capacity section for more detail about the composition of this team. At the end of this phase the process will be 26 months from the opening of the Academy.

July – December 2017 (2.2)

By now, a project team should be on board to take the project forward. They should be using the toolkit started by the Heinz team, revising the tools along the way as the design evolves and the budget and master schedule become more accurate and detailed.

They should quickly form key working groups with representation from experts, educators, and employers to deepen the design of the school.

- One of these working committees should focus on non-academic features of the program such as facility selection, recruiting students, staff, and families, and partnerships.
- Another group should focus more on the academic program including the development of the **course catalog**, providing input into curriculum, and initiating the skills documentation process with local industry employers. Through this process the team will understand the employer's expectations from future employees.

The team should also use the tools provided here to develop a **detailed task list** for the project. We recommend organizing the tasks in the following categories: Staffing, Funding Curriculum Development, Facility Design, Partnerships, Operation, and Marketing.

There is a graphic later in this section that might be helpful for this because it shows key milestones in each of these buckets. We try to highlight some of the most important pieces in each section, but because of the size of the project want to emphasize the importance of the project team in adding detail and developing a work plan around this framework.

By the end of this six-month period a detailed task list to ensure the success of the implementation of the project will be created.

January – June 2018 (2.3)

This phase will involve developing qualifications of faculty members, the number of faculty members, and beginning to work on required staffing agreements. Specifically, this should include creating a **staffing plan** with the high-level job descriptions, unique attributes, and projected schedules for the school staff members.

During this phase, a **location feasibility study** will be concluded. The criteria for locations will be revised and a specific location will be selected. Meanwhile, the project team will build on transportation options presented in this budget and develop a feasible **transportation plan** for the school. The team will also create a comprehensive list of **technology requirements** that must be met to ensure the success of the program. This phase is critical to the success of this project, and the board of directors will be actively involved throughout this process.

The skills mapping process to identify specific associate degree offerings in selected concentrations should be completed at this point, with curriculum development ongoing and prioritizing 9th grade course offerings. A **student recruitment campaign** will be developed and launched during this period.

By the end of this six-month period a facility will be selected.

July – December 2018 (2.4)

During this phase the project team will form **partnership agreements** with both academic and corporate organizations, ensuring that each associate degree offering has at least one corporate partner. Furthermore,

the project team will form **transportation agreements** in accordance to the transportation plan developed previously. The Board of directors will vote to approve any expenses related to technology requirements identified by the team. Students will apply to the program in **December 2018**, at which time student recruitment campaigns will come to an end.

This phase will also involve finalizing required **staffing agreements** that would build on the staffing plan developed previously, while also specifying the number of faculty members required to successfully administer the program.

By the end of this six-month period essential agreements with corporate, academic, and transportation partners will be secured.

Phase 3 – Opening (January 2019 – August 2019)

January – June 2019 (3.1)

During this phase, the project team will enlist the support of academic and corporate partners to review the skills identified by the skills mapping process concluded earlier. Additionally, a **staff recruitment campaign** will be launched to recruit 9th grade teachers and support staff members. Additionally, technology and other materials will be secured to meet the technology requirements identified earlier.

By the end of this six-month period staff recruitment campaigns will be launched to hire initial staff members.

July – August 2019 (3.2)

During this phase, the Board of directors will vote to open staff positions and the **hiring process of 9th grade teachers and support staff members** will begin. All 9th grade teachers and counselors will be hired, staff placements will be completed and curriculum design will come to an end. Furthermore, summer training sessions will be held for staff members and orientation sessions will be held for students and families.

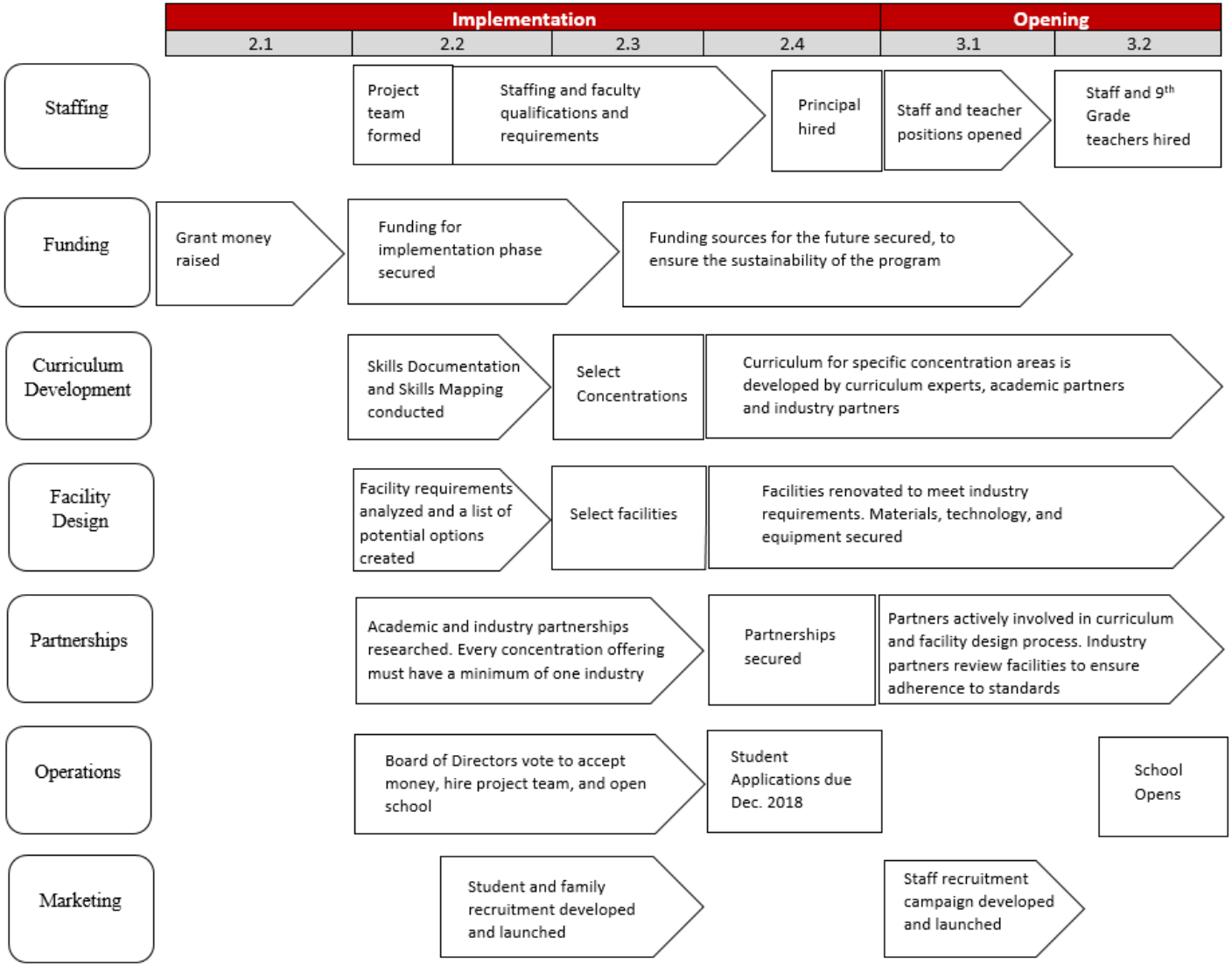
By the end of this three-month period all 9th grade teachers and support staff members will be hired.

Phase 4 – Operating (September 2019 – July 2025)

September 2019 – July 2025

During this period additional staff members will be hired with each consecutive batch of students. The school will grow along with the progression of the first cohort of 9th grade students, until it reaches full capacity in 2025, as a 9-14 model. The development of the program each consecutive year will include, hiring teachers and support staff and developing curriculum for each grade.

Figure 3. The graphic below focuses on the next two phases of the project: Implementation and Opening. It shows key milestones for each sub-phase in the areas of Staffing, Funding, Curriculum Development, Facility Design, Partnerships, Operation, and Marketing.



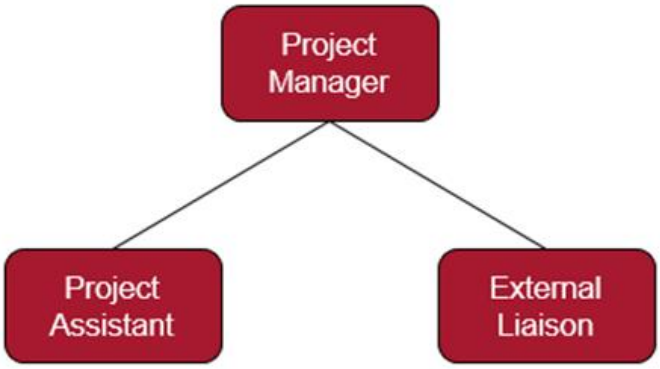
Organizational Capacity

This school requires a unique staff to execute its unique mission. A project team would be responsible for the earliest phases of the school, continuing and building on the work of the Heinz team. As the opening of the school nears, additional staff will be brought on in phases. The staff will continue to grow as the school grows. The organizational structure can be thought of in two phases. First the project team that will get the school up and running, and then the staff necessary to operate the school at full capacity.

Project Team

Initially, a project team would be responsible for continuing the work started by the Heinz College team. This project team would include a project manager, project assistant, and an external liaison. The full-time manager and assistant would be internally focused, developing and executing a plan to open the school. The liaison would be part-time and would ideally be from a trusted partner organization. This person would be externally focused, building relationships with and support from the community, and coordinating the logistics and engagement of the advisory committees referenced above. The timeline emphasizes the importance of having this team on board in July 2017.

Figure 4. Initially, a three-person project team would lead Implementation and Opening.

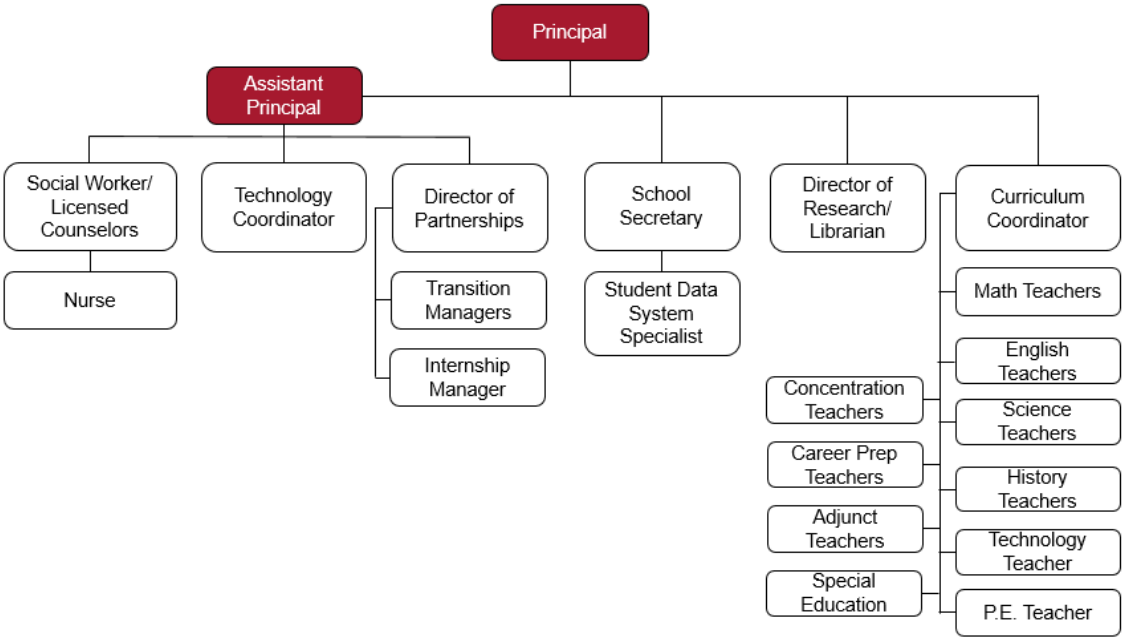


In the second year of planning, additional staff would be brought on board to assist with opening the school. They are the **Principal** and **Director of Partnerships**, two key administrators who will anchor the staff at the school, and the **Curriculum Coordinator**, who will manage the development and tailoring of the curriculum. This is not a permanent position, but one that would ideally be there from the second year of implementation well into operation of the school before rolling off as the school gets closer to capacity.

School Staff

The organizational structure of this schools can be broken into three main areas: administration, support, and academic. Each department would grow as the school grows, with a few key players from each being hired during the planning years.

Figure 5. This draft organizational chart shows the school staff when the Academy is operating at capacity.



Administrative Staff

This school not only requires management of the myriad of administrative and logistical tasks that a traditional school does, but also includes the management and coordination related to the college level courses and work experience. Thus, the administrative staff will include those in traditional roles as well as some unique to the design.

Given the unique mission and design of this school, it will need a visionary Principal. Supported by an Assistant Principal, they will focus on maximizing student's experiences and ensuring that the school lives up to its mission. The Assistant Principal oversees students experience at Pittsburgh Associate's Academy, while the Principal focuses on running the entire program.

The Director of Partnerships, a role unique to this school, will be charged with managing the partnership with the community college and corporate partners. They will be the main point of contact with the partner community college and will develop all aspects of the relationship. They will additionally work with Corporate Partners, to collaborate where possible. The Director of Partnerships will be supported by an internship manager, two transition managers, and a partnerships assistant.

The inclusion in technology in all aspects of the school requires a Technology Coordinator to maintain the systems. With each student receiving a laptop, there will be security and maintenance issues to be handled. The Technology Coordinator will maintain the school network and repair devices. Additionally, they will teach a variety of technology courses.

Each of these positions listed above will additionally serve as Teaching Administrators teaching at least one non-core course a year.

An Administrative Team, will help ensure that all logistics are covered. The School Secretary will help manage the day to day logistics. Student Data System Specialist will be in charge of maintaining student records, assisting with student registration and additional administrative tasks.

Support Staff

A strong support network is a key feature of this school. If students can enter the school at any academic level, supports need to be in place to ensure that they can all succeed and graduate with an Associate Degree. Outside of academic support, students will need access to advisors who can help support their future (career and college advisor) as well as those who can help deal with other issues in their lives (social worker). The average guidance counselor in the U.S is responsible for 470 students, greatly exceeding the maximum 250 students/counselor recommended by The American School Counselor Association. Our goal is to ensure that the ratio of students to support staff remains reasonable to be able to help students navigate the unique program.

Students support would be focused in three areas: basic, academic, and professional development.

Basic support for students well-being is provided by the Nurse and Social Workers/Licensed Counselors. This is a critical function in a school serving this population of students, many of whom are currently not on track to take advantage The Promise without the support of the school community.

Academic support. The transition managers would be focused on academic support and would help students transition from high school to early college. They would be a key contact with CCAC related to student progress, scheduling, grades, and credits and will help students will all aspects - from figuring out scheduling, looking at majors, filling out the required forms, they'll help guide students through the process and support them as they take advanced coursework. The Transition Manager will work under the Director of Partnerships.

Professional development. The Internship Manager focuses on students' professional development. They will work with the Director of Partnerships to secure internships for students. The Director of Partnerships also work with corporate partners to connect students to internships and create opportunities for the school in the activity and advisory period and elsewhere in the program.

Teaching Staff

A key feature of this school is its unique sequence of core courses and integrated approach. In order to develop integrated courses, like the math sequence, a Curriculum Coordinator will join the school staff in the year prior to opening to begin to develop the full curriculum. They will continue in this role once the school opens, working to ensure that the curriculum remains relevant.

As the number of students grows, so would the number of teachers. Pittsburgh Associate's Academy would have teachers in the traditional subject areas of math, science, social studies and English, but would also employ career prep teachers, a technology teacher, and concentration teachers. The concentration teachers would be focused in the areas of health, IT, business, and advanced manufacturing. The teaching staff would also include two special education teachers.

Key Hiring Dates

Pittsburgh Associate's Academy will open with 9th grade and add an additional grade each year. Given this growth plan, the faculty will grow in a similar way. A detailed overview of how the staff will grow can be seen in the "Staff by Year" section of the budget.

Year 00: July 2017 - June 2018

The Project Team, consisting of the Project Manager, Project Assistant, and External Liaison, will be formed.

Year 0: July 2018 - June 2019

The Principal, Director of Partnerships, and Curriculum Coordinator will be hired to join the Project Team.

Year 1: July 2019 - June 2020

The 9th grade teaching staff (two math, two science, two English, one P.E, one Technology, and one Career Prep) will be hired. The foundation of the support staff including Special Education teachers, a Social Worker/Licensed Counselor and a full-time Nurse will be hired. The Director of Technology, Director of Research, and Administrative staff are also hired.

Year 2: July 2020 - June 2021

Additional teachers are hired in the spring of 2019, beginning employment in July 2019. This includes four concentration teachers, two social studies teachers, a math teacher, and a science teacher. The support staff is expanded to include two transition managers and one internship manager.

Year 3: July 2021 - June 2022

An additional math, English, science and social studies teacher are hired in the spring of 2018, beginning employment in July 2019.

Year 4: July 2022 - June 2023

The teaching staff is at operating capacity in this year, any hires are based on vacancies. An additional licensed counselor is hired.

Year 5: July 2023 - June 2024

Four additional concentration teachers are hired to teach subject specific courses and help support students taking college level courses.

Year 6: July 2024 - June 2025

The staff is at operating capacity, any hires are based on vacancies.

Partnerships

This program will strive to equip students with skills and education that are required for employment in the regional workforce. Therefore, partnerships, both academic and industry based, will be a key to the success of the project. Partners will help ensure the relevance of concentration offerings to the needs of the regional

workforce, as well as adherence of the curriculum to industry standards. In order to better organize the process, partnerships have been divided into four distinct categories aligned to the biggest opportunities for impact – flagship Facility, Academic, and Corporate Partners. There will be many smaller opportunities within specific courses and aspects of the program, some of which are highlighted below under the Other Partnership Opportunities heading.

A Flagship Facility Partner

A flagship facility partnership would help ensure students gain access to the latest equipment and expertise in a given industry. A potential partner within this category is the Energy Innovation Center (EIC). A number of cutting edge labs that have been established at the facility. Furthermore, the facility is expanding and new partnerships with organizations within the Pittsburgh region are being formed. A partnership with the EIC will allow access to the abundant space available at the facility and also facilitate partnerships with the individual organizations that have established labs in the building. Thus a partnership with the EIC will provide students access to the resources available at this facility, while also facilitating close relationships between the school management and regional organizations.

A Flagship Academic Partner

With an Associate Degree as the core outcome of the program, a deep partnership with a degree-granting institution is essential. A partnership with a local community college will allow the program to better align the academic curriculum with the industry needs. Furthermore, this partnership will allow for the creation of and access to courses that are currently not available to students enrolled at the college. The Community College of Allegheny County is a potential partner in this category. This partner will be responsible for providing college credits for all college-level courses, regardless of their location. Additionally, CCAC may also provide certification and training programs to school faculty so as to enable them to teach college level courses at the school itself, as opposed to the college campus.

Four Deep Corporate Partnerships

To provide instruction that is relevant to regional industries it will be imperative to form partnerships with local industry members. These corporate partners will be an essential component of the school design, especially in determining which concentrations must be offered at the school. This will ensure that the school will continue to provide students with academic and work skills that are relevant to the regional workforce. Corporate partners will also play a role in ensuring that the academic coursework is relevant to workforce needs. In doing so, corporate partners will engage in skills mapping, curriculum design, and potential job opportunities. Each major at the school will have a minimum of one industry partner.

It is our recommendation that many industry partners are invited to engage on the planning committees, to offer students internships, and to be part of the school community. But ideally, there would be one key industry partner who would step up to be the lead sponsor of each concentration area. They would form a deeper partnership with the school that could include financial support for equipment, supplies, and other needs, internships for students, and even a commitment to interview students who successfully complete their degree for jobs in the organization.

Other Partnership Opportunities

In addition to these three central partnership areas, there are also two obvious and important areas that would allow a lot of smaller regional organizations to get involved. These are the internship program and Activity and Advisory Period.

Risks and Challenges

This school will have a unique design, and as such, will face additional risks not seen in a traditional model. A few of these risks are listed below, they have been sorted into categories:

Political Support

Challenge: For the project to move forward, it needs to be embraced by the district Board of Directors, leadership and staff.

Mitigation Strategy: This project really is intended as a research project that describes what it would take to respond to the needs identified, and the process that would need to be followed to opening such a school. It is not a sales pitch or even a proposal. It is a toolkit that is here to be used if the district leadership and community would want to move forward. Even if they do not do so immediately, the tools are designed such that they could easily be adjusted to a different timeline.

Funding

Challenge: Not only would the school district have to support the project politically, but the district and other private funders would have to contribute start-up funds to making it happen.

Mitigation Strategy: As noted above, this is not a sales pitch or a proposal, but rather a toolkit and research project. However, we want to emphasize that choosing to move forward with such a project but not providing the start-up resources to do it effectively is a worth path than not moving forward at all. A failed project would further set back the possibility of addressing the identified need. If the district does decide to move forward with the project, community leaders engaged in this project should do what is in their power to contribute the start-up funds to get it off the ground and encourage the district to invest the additional start-up costs on their end as well.

Transportation and Scheduling

Challenge: Transportation and logistics are always a constraint faced by high schools, and a complex management challenge. But this school poses even greater complexity. We consider to rise to the level of a risk that could fatally undermine the design of the school and serve as a barrier to realizing the vision describer here.

Mitigation Strategy: Our project provides only a framework for the master schedule of the school and some possible ideas for addressing transportation needs. This should be a first wave priority for the incoming project team to get ahead of this before big promises are made about what is possible here. Schedule feasibility analysis should be conducted with outside expertise engaged if necessary and

participation from CCAC at the table. Transportation should be a major consideration in where the school is located. One option would be to utilize public transportation and bus passes made available through the city. An additional option would be to provide a shuttle that either runs constantly on a loop between campus and CCAC or serves as a valet.

Career Relevance

Challenge: Specific concentrations may no longer be applicable to the Pittsburgh region. Furthermore, skills taught at the Academy may not align with those preferred by employers.

Mitigation Strategy: The skills mapping process, developed by P-Tech, will be an ongoing process. This will ensure that employers, regional leaders, as well as school management are all aware of any changes in the landscape. Additionally, the fact that the more specialized courses are likely to be taught by adjunct rather than full-time faculty will make it easier for the school to change aspects of its course catalog from year to year.

Academic Performance

Challenge: Students may enter the program far behind grade level, and not all students may be prepared to take college-level courses at the same point in their program.

Mitigation Strategy: The program has built-in support system for providing students with any additional support they may require. The implementation of a block schedule allows for 80-minutes per day, 5 days a week to learn material. Furthermore, the implementation of student looping allows teachers a second and third chance to mitigate any skill gaps. Lastly, various curriculum design features – such as the Physics first curriculum – are designed for student success.

Instruction

Challenge: Teachers may not be prepared/equipped to provide rigorous instruction, especially in the altered academic courses. Academic teachers may be unable to their tie expertise with that required by the workforce.

Mitigation Strategy: Teacher teams will comprise of academic instructors from various backgrounds. Additionally, the design of the school will require a close association with corporate partners. Among other things, this partnership will ensure that the academic coursework is relevant to workforce needs.

Budget

A detailed budget for Year 00: July 2017 - June 2018 to Year 6: July 2024 - June 2025 can be seen in the budget tab of the binder.

In looking at the budget for this school, there are a few key caveats. First, the Heinz team has not been working directly with the Pittsburgh School District, so the numbers presented in this budget are based on a number of assumptions and estimates. This budget has been mostly informed by the costs of starting the Pittsburgh Science and Technology Academy in 2009, supported by other publicly available data. Second, the Heinz team has assumed that the district would allocate an annual site-based operating budget of $7,500 per pupil. This budget assumes this a reasonable estimate but again, may or may not be up to date in terms of reflecting the true allocation. Third, this budget does not include facilities renovations as that would not be included in the site-based budget.

The budget includes key cost drivers that fall into two main categories -- personnel and program costs. Personnel includes the teaching staff, support staff, leadership and administrators. The program costs include equipment, technology, and supplies, program and professional development, contract services, and other purchases. Additionally, we have to consider the costs associated with the early college aspect - tuition, fees, and textbooks.

Based on these components, we've estimated the following total annual costs detailed in Figure 6.

Figure 6. Total annual cost (baseline) of the Academy in Years 00 through Year 6 showing Variance beyond

Years	Total Cost	Covered by General Fund per Pupil Allocation	Covered by Promise Scholarship	Variance + (-)
Year 00: July 2017 - June 2018	$ 275,749	$ -	$ -	$ (275,749)
Year 0: July 2018 - June 2019	$ 1,145,653	$ -	$ -	$ (1,145,653)
Year 1: July 2019 - June 2020	$ 2,647,290	$ 750,000	$ -	$ (1,897,290)
Year 2: July 2020 - June 2021	$ 3,343,294	$ 1,500,000	$ -	$ (1,843,294)
Year 3: July 2021 - June 2022	$ 3,715,263	$ 2,250,000	$ -	$ (1,465,263)
Year 4: July 2022 - June 2023	$ 3,887,070	$ 3,000,000	$ -	$ (887,070)
Year 5: July 2023 - June 2024	$ 4,306,916	$ 3,000,000	$ 352,650	$ (954,266)
Year 6: July 2024 - June 2025	$ 4,515,814	$ 3,000,000	$ 705,300	$ (810,514)
TOTAL	**$ 23,837,049**	**$13,500,000**	**$ 1,057,950**	**$ (9,279,099)**

the Pittsburgh Public Schools per pupil allocation (Years 2017 – 2025.

This budget provides an estimate of some of the key components including start-up costs, costs to begin operations, and costs to operate at capacity on an ongoing basis. For each of the eight years in this budget, there is a variance column which shows the difference between the total expenses and total funding.

This decreases each year as the school gets closer to capacity and is projected to total about $9,279,099 over the eight years. This amount ranges from a high of about $1,897,290 in Year 1 to a low of $810,514 by the time we are reaching capacity.

Understanding this variance is important if this project is going to come to fruition since it gives us an idea of the gap that needs to be addressed to make the project possible. For the purpose of understanding it, we separate the variance into two parts – variance while the school is growing and variance as the school approaches and reaches its capacity.

Variance while the school is growing

In years 00 through 5 (2017 through 2024) this variance is attributable to the fact that the school is starting up, so costs are being incurred that either are one-time costs directly related to start-up or are operating costs that cannot yet be covered by the District's per pupil allocation since the school is growing to capacity and initially has a small number of students. This variance can be broken down into 3 areas: startup costs, one time investments, and early operations. The total amount of the variance in these years is about $7,514,318. This number can be broken down into three contributing amounts relevant to future fundraising and allocation efforts.

1. **Initial Start-Up Costs**. The planning of this school would begin two years prior to the first students arrives and, as such, expenses would be incurred prior to the school receiving any per pupil allocation. These costs would be largely driven by the personnel, contracts and supplies in Year 00 and Year 0 and would total about $858,202.
2. **One-Time Purchases.** During and prior to the first years of operation, one time investments would be made in equipment, technology and supplies that would furnish key lab spaces and classrooms. These investments would be heavily concentrated in Years 0-1 when the school begins to serve students and grow. These costs would also include curriculum development and marketing. This would total about $1,026,795.
3. **Early Operating Costs.** As the school grows to reach 9-14, per pupil allocation will begin to cover more and more costs, but there will be a gap to be covered. For example, some faculty will be hired before per pupil allocation can fully cover their salary. This would total about $6,583,588.

Variance When Operating at Full-Capacity (Year 6 Onwards)

By year 6, the school is at capacity and most of the largest start-up costs have been incurred. However, the design of this school, and the fact that it is an early college program introduces some unique funding challenges. Our budget shows that at Year 6, even when the school is at capacity, we are still projecting an ongoing operating deficit of $810,514.

The reason for this operating deficit is that the school will only receive a per pupil allocation from the school district when students are in grades 9-12. Essentially this means the school only receives per pupil allocation for 400 students, even though it is serving 600. The Promise helps cover expenses for the additional 200 students, but only for their tuition and fees, not for all of the other costs to support them through the program and the supplemental offerings at the Academy. Therefore, in the on-going operations at full capacity, the key drivers of the annual operating gap are related to costs that a traditional PPS school wouldn't need to incur including staff that serves students in grades 13-14, 1:1 laptop program, and costs associated with the associate degree not covered by Promise scholarships like textbooks.

Three Versions of the Budget

The budget includes low, baseline, and high versions. The previous section looks specifically at the baseline budget. Changes in each version of the budget are highlighted in yellow.

Our baseline budget assumes no facility costs, includes teachers that cover core courses and early CCAC courses, and that students utilize public transportation and bus passes provided through the city.

The total costs, allocation, and variance for the low version can be seen in Figure 7.

Figure 7: The low budget version of total annual cost of the Academy in Years 00 through Year 6 showing Variance beyond the Pittsburgh Public Schools per pupil allocation (Years 2017 – 2025.

Years	Total Cost	Covered by General Fund per Pupil Allocation	Covered by Promise Scholarship	Variance + (-)
Year 00: July 2017 - June 2018	$ 229,523	$ -	$ -	$ (229,523)
Year 0: July 2018 - June 2019	$ 1,075,377	$ -	$ -	$ (1,075,377)
Year 1: July 2019 - June 2020	$ 2,603,790	$ 750,000	$ -	$ (1,853,790)
Year 2: July 2020 - June 2021	$ 3,194,083	$ 1,500,000	$ -	$ (1,694,083)
Year 3: July 2021 - June 2022	$ 3,591,394	$ 2,250,000	$ -	$ (1,341,394)
Year 4: July 2022 - June 2023	$ 3,746,331	$ 3,000,000	$ -	$ (746,331)
Year 5: July 2023 - June 2024	$ 4,029,665	$ 3,000,000	$ 352,650	$ (677,015)
Year 6: July 2024 - June 2025	$ 4,329,815	$ 3,000,000	$ 705,300	$ (624,515)
TOTAL	**$ 22,799,978**	**$ 13,500,000**	**$ 1,057,950**	**$ (8,242,028)**

The main variance in this budget are:

- Reduced number of Math, Science, English, and Social Studies teaching staff;
- Increased number of adjunct teaching staff (3 full time, and 8 half-time);
- Reduced number of early staff hires;
- Reduced the length of the Curriculum Coordinator's employment.

The total variance for the high version can be seen in figure 8.

Figure 8: The high budget version total annual cost of the Academy in Years 00 through Year 6 showing

Years	Total Cost	Covered by General Fund per Pupil Allocation	Covered by Promise Scholarship	Variance + (-)
Year 00: July 2017 - June 2018	$ 275,749	$ -	$ -	$ (275,749)
Year 0: July 2018 - June 2019	$ 1,233,201	$ -	$ -	$ (1,233,201)
Year 1: July 2019 - June 2020	$ 3,029,098	$ 750,000	$ -	$ (2,279,098)
Year 2: July 2020 - June 2021	$ 3,717,967	$ 1,500,000	$ -	$ (2,217,967)
Year 3: July 2021 - June 2022	$ 4,287,462	$ 2,250,000	$ -	$ (2,037,462)
Year 4: July 2022 - June 2023	$ 4,437,165	$ 3,000,000	$ -	$ (1,437,165)
Year 5: July 2023 - June 2024	$ 4,974,471	$ 3,000,000	$ 352,650	$ (1,621,821)
Year 6: July 2024 - June 2025	$ 5,183,369	$ 3,000,000	$ 705,300	$ (1,478,069)
TOTAL	**$ 27,138,481**	**$ 13,500,000**	**$ 1,057,950**	**$ (12,580,531)**

Variance beyond the Pittsburgh Public Schools per pupil allocation (Years 2017 – 2025.

The main variance in this budget are:

- Increased early hiring;
- Addition of art teacher, music teacher and 2 foreign language teachers;
- Addition of learning 2 support staff;
- Transportation contracts beginning in Year 3.

As noted above, the facility renovation is not included in our budget. This would not be a program cost, but would likely come from the district's central facilities and operations budget were the project to move forward. The scope of this renovation would significantly influence the overall cost of the project.

Sustainability

Sustainability is an important aspect in determining the success of this project. The factors that will be important to the sustainability of this project are financial support, educator support, and community support. With regards to financial sustainability of the school, it will be imperative to secure other sources of capital to ensure that the Academy continues to operate at its optimal capacity. In order to facilitate this discussion, this report presents three versions of the budget, each represented a different potential scenario. It will be up to the project team to determine the feasibility of any or all of these budgets.

Similarly, educator support and community support are extremely important for the continued success of the Academy. The proposed structure of the school incorporates measures to facilitate mechanisms for supporting staff in performing to their best abilities. A similar structure is proposed for community support in the school. However, determining the specifications for educator and community support were out of the scope of this project and will, therefore, be developed by the project team.

Evaluation

Process Theory

Schools and school districts have a wide array of "report cards" that measure their level of performance in a variety of categories. These report cards are both external and internal measure of accountability assessment. The Pittsburgh School District expands substantial efforts to collect, organize and present performance information. However, researchers have noted the inadequacy of this model, as performance indicators make little or no reference to the intentions (goals) of the organization to be described and virtually no reference to program quality with respect to the specific results of instruction and research. Furthermore, external measures of accountability presume that these performance indicators will flow down to achievements on the ground. Yet, this is unlikely to occur if the performance indicators are not linked to the drivers of institutional effectiveness in a meaningful way. Our program theory is based upon the concept that performance indicators can provide substantial information for strategic decision making, but that our school must develop internal indicators that pay attention to the contextual characteristics and operational goals of our model. Furthermore, these indicators must be balanced with the understanding that success cannot be measured in a one-dimensional way.

Robert S. Kaplan and David P. Norton developed the Balanced Scorecard in 1992. The scorecard is a set of measures that allow for a holistic, integrated view of organizational performance. Originally developed for businesses, it has been applied in government and non-profits as well. The development of the balanced scorecard method occurred because organizations realized that focus on a one-dimensional measure of performance (such as a return on investment or profit) was inadequate, and managers used bad strategic decisions to increase the bottom line at the expense of other organizational goals. The balanced scorecard looks at a company from four perspectives:

- Financial perspective: How do we look to shareholders?
- Customer perspective: How do customers see us?
- Internal business perspective: What must we excel at?
- Innovation and learning perspective: Can we continue to improve and create value?

The balanced scorecard emphasizes the articulation of clear goals and the articulation of various objectives and measures that feed into this goal. Furthermore, by limiting the perspectives to four distinct categories, it minimizes information overload by limiting the number of measures used. Essentially, it forces school administrators to focus on the handful of measures that are most critical. The balanced scorecard has been implemented successfully in Atlanta Public Schools, Aldine Independent School District (Houston, TX), Montgomery County Public Schools, and the Mt. Lebanon School District (Pittsburgh, PA). Though our program theory does not propose implementing the balanced scorecard as the district level, we believe aspects of it can be incorporated for the school.

An overview of the current external and internal assessments used by Pittsburgh Public Schools is below:

In 2015, the **Pennsylvania System of School Assessment (PSSA)** was introduced to Pittsburgh Public Schools. Implemented by the Pennsylvania Department of Education, the assessment is a "standards-based, criterion-referenced assessment which provides students, parents, educators and citizens with an understanding of student and school performance related to the attainment of proficiency of the academic standards." The assessment measures English, Mathematics, and Science and Technology knowledge grade by grade and school districts are given latitude to design curriculums and instruction that meet or exceed

the standards. Individual student scores can also be used by teachers to identify students who may be in need of additional educational opportunities, and school scores provide information to schools and districts for curriculum and instruction improvement discussions and planning.

Keystone Exams are end-of-course assessments designed to assess proficiency in the subject areas of Algebra I & II, Geometry, Literature, English Composition, Biology, Chemistry, U.S. History, World History, and Civics and Government. The Keystone Exams are used as one component of Pennsylvania's new system of high school graduation requirements.

Pennsylvania Accountability System (PAS) applies to all public schools and districts. It is based upon the State's content and achievement standards, valid and reliable measures of academic achievement, and other key indicators of school and district performance such as attendance and graduation rates.

Pittsburgh Public Schools developed a **value-added statistical model** that estimates teachers' and schools' contributions to the achievement of their students. This joint effort by the school district and the teachers' union is "to empower effective teachers" through evaluation, professional development, new career tracks, and compensation. The value-added models use not only state assessments but also course-specific assessments, student attendance, and course completion rates, thereby aiming to produce estimates of the contributions of teachers and schools that are fair, valid, reliable and robust.