A.2 Target Population

Pieceful Solutions Charter School targets to serve students affected by Autism Spectrum Disorders (ASD) in grades K-5 in Phoenix Metro area. Pieceful Solutions Charter School will not be a neighborhood school.

Autism is a complex developmental disability that typically appears during the first three years of life and is the result of a neurological disorder that affects the normal functioning of the brain, impacting development in the areas of social interaction and communication skills. Both children and adults with autism typically show difficulties in verbal and non-verbal communication, social interactions, repetitive behaviors, and leisure or play activities. Children with autism have mild to severe deficiencies in communication, self-help and social-emotional skills. Many have major behavioral challenges as well.

Autism is a growing serious developmental disability. Nationally, about 1 in 88 children has been identified with an autism spectrum disorder (ASD) according to estimates from Center for Disease Control's Autism and Developmental Disabilities Monitoring (ADDM) Network. Data shows that the prevalence of ASD in Arizona as 1 in 64 children, a rate that is significantly higher than the national average (1in 88).

Many public schools (district and charter) are struggling with the boom in autism cases, making fractional attempts to align their curriculum and instructional methodology to meet the needs of this special population group. Many do not have the economies of scale and financial resources to provide a full spectrum of services to those students. With so many competing interests at a typical public school, families struggle daily to get the services so that their children can learn. Often those current programs will only focus on ABA in their autistic program, while the majority of the students display other than behavioral needs within the autistic spectrum, mostly relating to learning. Parents who have the means often send their autistic children to private schools paying tuition rates between $22,000 and $32,000 a year. Others, who can afford legal services, undertake costly battles to get school districts to pay for private schools. Most families living with autism in the Phoenix Metro area don't have these options. The state of Arizona offers choice through the Education Savings Account. Adopted in 2011, education savings accounts are state-funded accounts from which parents can withdraw funds to pay for private school tuition, virtual classes, educational therapies, tutoring, college tuition, and more. Eligible children include students in failing schools, with special-needs, and those adopted out of the state foster system. However, the educational choices for autistic kids are very limited, as the only quality program in Metro Phoenix is up to capacity and with a waiting list. There is gap in autism services in the Metro Phoenix area. Currently, there are no public choices in Metro Phoenix to educate students with autism.

This necessitates the existence of an educational program that will meet the needs of autistic students that will improve their academic achievement and prepare them with the necessary skills to function successfully and independently later in college, career and life.

Identified Prevalence of Autism Spectrum Disorders
ADDM Network 2000-2008
Combining Data from All Sites

Surveillance Year	Birth Year	Number of ADDM Sites Reporting	Prevalence per 1,000 Children (Range)	This is about 1 in X children...
2000	1992	6	6.7 (4.5-9.9)	1 in 150
2002	1994	14	6.6 (3.3-10.6)	1 in 150
2004	1996	8	8.0 (4.6-9.8)	1 in 125
2006	1998	11	9.0 (4.2-12.1)	1 in 110
2008	2000	14	11.3 (4.8-21.2)	1 in 88

The table to the right presents summary data for the identified prevalence of ASD for the period 2000 through 2008 in the US. Autism is a growing serious developmental disability. Nationally, about 1 in 88 children has been identified with an autism spectrum disorder (ASD) according to estimates from Center for Disease Control's Autism and Developmental Disabilities Monitoring (ADDM) Network. This is a substantial increase in autistic population: from 1in 150 in 2000 to 1:88 in 2008. Autism occurs in all racial, ethnic, and socioeconomic groups and is five times more likely to occur in boys than girls. Researchers at the Johns Hopkins Bloomberg School of Public Health contributed to a new Centers for Disease Control and Prevention (CDC) report that estimates the prevalence of Autism Spectrum Disorders (ASD) as affecting 1 in 88 U.S. children overall, and 1 in 54 boys.[1]

The Center for Disease Control's Autism and Developmental Disabilities Monitoring (ADDM) Network conducted a study specifically in a subset of Maricopa County, including metropolitan Phoenix, our target location. This is the most up-to-date, reliable and discrete data on the prevalence of autism in the Phoenix Metro area, including community demographics.

Arizona results Autism Spectrum Disorder (ASD): Maricopa County[2]

Table 1	Prevalence, 2004	Prevalence, 2008
# of children identified with an ASD:	133	507
Total prevalence of ASDs	9.8 per 1,000	15.6 per 1,000 (or 1 in 64)
Boys	15.8 per 1,000	25.1 per 1,000 (or 1 in 40)
Girls	3.6 per 1,000	5.4 per 1,000 (or 1 in 185)
White, non-Hispanic	12.6 per 1,000	20.7 per 1,000
Black, non-Hispanic	5.6 per 1,000	16.1 per 1,000
Hispanic	7.0 per 1,000	8.9 per 1,000
Asian or Pacific Islander	11.9 per 1,000	19.0 per 1,000

[1] http://www.cdc.gov/ncbddd/autism/data.html
Community Report From the Autism and Developmental Disabilities Monitoring (ADDM) Network Prevalence of Autism Spectrum Disorders (ASDs) Among Multiple Areas of the United States in 2008. This community report summarizes the main findings from the following published report: Centers for Disease Control and Prevention (CDC). Prevalence of Autism Spectrum Disorders–Autism and Developmental Disabilities Monitoring Network, United States, 2008. Morbidity and Mortal Weekly Report (MMWR) 2012; Vol. 61(3).

[2] Prevalence of the Autism Spectrum Disorders (ASDs) in Multiple Areas of the United States, 2004, 2006 and 2008, Community Report from the Autism and Developmental Disabilities Monitoring (ADDM) Network. Funded by the Centers for Disease Control and Prevention (CDC), U.S. Department of Health and Human Services. *This report summarizes the main findings from the following published report: Centers for Disease Control and Prevention (CDC). Prevalence of Autism Spectrum Disorders—Autism and Developmental Disabilities Monitoring Network, United States, 2006. MMWR Surveill Summ 2009;58(SS-10), Morbidity and Mortal Weekly Report (MMWR) 2012; Vol. 61(3).

Table 2	2004	2008*
Population of 8-Year-Olds in Study Area	13,620	32,601
White, non-Hispanic	48.2%	46.1%
Black, non-Hispanic	5.2%	5.5%
Hispanic	40.9%	43.6%
Asian or Pacific Islander	3.1%	2.7%
Children in special education	10.2 %	

The two tables above present data for the prevalence of autism in Arizona, and more specifically Maricopa County, which was part of the national study. The results based on 2008 medical and school records of 32,601 Maricopa County 8-year-olds. According to the study:

- There are 507 students identified with autism in Phoenix metro area.
- Data shows that the prevalence of ASD in Arizona as 1 in 64 children, a rate that is significantly higher than the national average (1in 88).
- Data for Arizona regarding the gender distribution of ASD follows the national averages: there are significantly more boys affected by autism than girls (autism is five times more likely to occur in boys than girls).
- Estimated ASD prevalence for Maricopa County also varied by race and ethnicity. When data from all sites were combined, the estimated prevalence among non-Hispanic white children (12.0 per 1,000) was significantly greater than that among non-Hispanic black children (10.2 per 1,000) and Hispanic children (7.9 per 1,000).

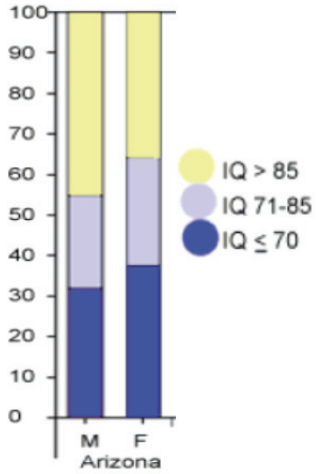
The national averages and the trends in Arizona indicate a substantial need for services and specialized education for children with autism. Additionally, growing numbers of minority children are being diagnosed, with a 91 percent increase among black non-Hispanic children and a 110 percent increase for Hispanic children. Researchers say better screening and diagnosis may have contributed to those increases among minority children.[3]

Demographic data for the students enrolled at the private operation of Pieceful Solutions show similar demographic trends, as those for Maricopa County: majority of the students are White (78%), followed by the Hispanic group (12%), Black (7%), Asian (2%) and Native American (1%). The gender distributions follow the national and Arizona trends for autistic kids: the students are predominantly boys (80%) and girls (20%). 7% of the students are ELL (Spanish speaking, which follows the national and Arizona trends of increase of Hispanic children with autism. The school has capacity to address the needs of ELL autistic kids and their parents and will transfer this capacity to the charter school operation as well.

[3] Prevalence of the Autism Spectrum Disorders (ASDs) in Multiple Areas of the United States, 2004, 2006 and 2008, Community Report from the Autism and Developmental Disabilities Monitoring (ADDM) Network. Funded by the Centers for Disease Control and Prevention (CDC), U.S. Department of Health and Human Services. *This report summarizes the main findings from the following published report: Centers for Disease Control and Prevention (CDC). Prevalence of Autism Spectrum Disorders—Autism and Developmental Disabilities Monitoring Network, United States, 2006. MMWR Surveill Summ 2009;58(SS-10), Morbidity and Mortal Weekly Report (MMWR) 2012; Vol. 61(3).

- current levels of academic performance.

The graph below presents IQ data among 8-year olds in Maricopa County. The data is part of the Center for Disease Control's Autism and Developmental Disabilities Monitoring (ADDM) Network study. The graph shows that the majority of the 8-year old autistic kids had IQs higher than 70. The girls had more even distribution of the three IQ levels, approximately 1/3rd tested below 70, 1/3rd tested between 71-85 and 1/3rd tested higher than 85. More boys than girls tested in the higher than85 IQ levels.



ARIZONA: Most recent intelligence quotient (IQ) as of age 8 years among children identified with autism spectrum disorders (ASDs) for whom psychometric test data were available,* by site and sex- Autism and Developmental Disabilities Monitoring Network, seven sites†, United States, 2008 - http://www.cdc.gov/ncbddd/autism/data.html

The Arizona Department of Education does publish AIMS results for students with disabilities in general, but does not disaggregate this data based on the different disability modalities. Therefore, data on the AIMS state test results is not available specifically on students with autism. The tables to the left compare the 2013 AIMS for grades 3, 4 and 5 for students with disabilities, who took the test with and without accommodations between Maricopa County averages and Arizona averages for the targeted grades. Those AIMS result, however comprise a wide range of students with disabilities – from slight learning disabilities to non-verbal, severe, low functioning modalities. On average, however, data indicates that about 63% of the students with disabilities in Maricopa County and 72% of the students with disabilities in Arizona failed to pass the AIMS test in the areas of Math, reading and Writing with accommodations. Those percentages are slightly higher for students with disabilities who took the 2013 AIMS test without accommodations.

2013 AIMS Passing Scores Students with Disabilities With Accommodations		Maricopa County	Arizona (AZ)
Grade 3	**Math**	n/a	20
	Reading	n/a	20
	Writing	n/a	100
Grade 4	**Math**	15	15
	Reading	23	24
	Writing	50	33
Grade 5	**Math**	45	13
	Reading	56	25
	Writing	35	8
Averages		37	29

2013 AIMS Passing Scores Students with Disabilities No Accommodations		Maricopa County	Arizona (AZ)
Grade 3	**Math**	58	55
	Reading	56	54
	Writing	100	100
Grade 4	**Math**	52	49
	Reading	57	55
	Writing	0	0
Grade 5	**Math**	n/a	42
	Reading	n/a	53
	Writing	n/a	32
Averages		54	49

The private operation of Pieceful Solutions has extensive data for the academic achievement of its student population. When looking at student achievement, Pieceful Solutions looks at growth in students in all areas – academic and behavioral. In special education, growth often refers to changes in performance on curriculum-based or norm-referenced measures designed to assess basic skills, regardless of the student's grade level. Although important for diagnostic purposes, these measures may not be the best for growth models. A basic skills focus can inaccurately measure the performance of students who have mastered grade level higher-order skills (such as problem solving) without mastering lower level skills (such as computation). Standards-based growth models do not measure growth toward individualized student goals. At Pieceful Solutions, student growth is measured by progress on standards based models but more importantly on progress on individualized goals, which are aligned with standards. Nevertheless, students at Pieceful Solutions have been tested with the AIMS Web. For the last two years, the private operation reports academic performance averages of 10% for reading math on the 2011 and 2012 AIMS Web assessment results of students with a typical range of growth 35-40 SGP.

Pieceful Solutions Charter School will be one the first operational public charter school created to serve students with autism. Pieceful Solutions Charter School will build upon the pioneer success of the private operation established by Kami Cothrun in 2008 with 6 students in Apache Junction, Arizona, which grew to two campuses in Mesa and Chandler, currently serving 120 students.

The quality of the model developed by Kami is validated by the overwhelming demand, which exists for quality education for students with autism. Parents with children with autism from all over the state (Yuma, Flagstaff and other locations) who have heard about the innovative and highly effective method of instruction at Pieceful Solutions and made a tour and got to know the school better, submitted inquiries about opening such schools in their communities, or just went on to move closer to the current location of the school. Compelling are the stories of families with autistic kids from across the US that have decided to relocate to Phoenix to have an opportunity to enroll their autistic kids at Pieceful Solutions. Pieceful Solutions grabbed the attention of the local media and Channel 12 and Fox 10 news aired reports on the success of the school's program in educating kids with autism.

The Pieceful Solutions success for educating autistic kids was also studied by the Friedman Foundation, a national research organization on choice in education. Their most recent report *"The Education Debit Card: What Arizona Parents Purchase with Education Savings Accounts"* [4]specifically mentions the parental satisfaction of the academic achievement of their children enrolled at Pieceful Solutions *"The public school system has no ability to handle Sean's sensory needs. If there are too many kids in a classroom, he gets fidgety and becomes a distraction. His ability is not at the same grade level as the other students, so he was either forced to a level that is way above his ability or way below. The stress sets him off. We needed a program that understood him, that could gear toward his needs, instead of him having to fit into someone else's box…. [Pieceful Solutions offered] smaller class sizes, and people that understand autism. They know the difference between when he is acting out and he really does not understand something. They understand his social differences. They understand his sensory*

[4] The Education Debit Card: What Arizona Parents Purchase with Education Savings Accounts, report published by The Friedman Foundation for Educational Choice, retrieved on September 30, 2013 at http://www.edchoice.org/CMSModules/EdChoice/FileLibrary/1015/THE-EDUCATION-DEBIT-CARD-What-Arizona-Parents-Purchase-with-Education-Savings-Accounts.pdf

needs. When he is getting overwhelmed with something or something just doesn't make sense to him, they know how to work around that or how to flip him to a different subject…." - Jennifer Doucet, mother

The opening of Pieceful Solutions Charter Schools will provide a major solution to many parents and students who now struggle to find the education that meets their needs and expectations for their autistic children in grades K-5 in Metro Phoenix area. The Pieceful Solutions educational model, ground on the school's strong mission to educate autistic kids, of meets the needs of the targeted student population by providing a highly individualized, goals-driven, standards-aligned, research-based, data-driven education program in a small school, small class size and small student/teacher ratio with highly qualified staff, specially trained and chosen for their exceptional skills and commitment to working with children with special needs and autism. This program been proven by research and own practical experience to increase their academic achievement, develop their independent social and emotional skill, and prepare them successfully for life after school – college, career, and family. Furthermore, the program will also create the economies of scale and financial resources, necessary to provide full spectrum of services to those students, including ELL autistic students. This level of education would help bridge the gap in autism services in the Metro Phoenix area and would serve as a model for other educational entities serving this population.

Furthermore, by addressing the needs of autistic students for increased academic achievements in a high individualized comprehensive manner the Pieceful Solution program will provide a solid foundation for them to continue their education through high school and college. According to data on Autism Speak's website, people with autism spectrum disorder (ASD) are significantly more likely to major in science, technology, engineering and mathematics while in college. One reason may be that people with ASD are good at looking for patterns and understanding rule-based systems. Software companies (such as SAP) are recruiting people with autism for jobs that take advantage of a unique ability they have to focus sharply on tasks that require attention to detail, such as software testing, computer programming and data testing.

Successfully educating autistic kids will substantially reduce the economic costs associated with ASD. In 2005, the average annual medical costs for Medicaid-enrolled children with an ASD were $10,709 per child, which was about six times higher than costs for children without an ASD ($1,812). In addition to medical costs, intensive behavioral interventions for children with ASDs cost $40,000 to $60,000 per child per year.[5]

Pieceful Solutions Charter School will meet the needs for a special, individualized space for the target population – the program will be housed in a building, specially prepared to accommodate the specific program of instruction and small group individualized instructional environment. The school building has two spacious separate playground areas with playground equipment and three ramadas. The building has large windows allowing natural light in all classrooms/offices, as well as large skylights in the reception and atrium areas. The availability of natural light throughout the entire school building is a major plus of the facility in view of the specific program of instruction and the studies indicating behavioral problems associated with school buildings that have only fluorescent lighting and no windows/natural light in the

[5] http://www.cdc.gov/ncbddd/autism/data.html#economic

classrooms. Additional features of the school building include: recent installation of 11 brand new energy-efficient A/C units with a thermostat and climate/temperature control individual for each classroom and office room – such feature allows optimal climate environment in each room of the building; spacious covered patio; complete technology infrastructure - wiring for telephony and Internet with one or two drops in every classroom/office and sufficient technology infrastructure equipment already in place; Wi-Fi capacity of the entire building and outside patios; recent installation of panic hardware for all major exit doors of the facility; easy access - great street exposure on a major traffic artery (Warner Road) in a fast growth area – Chandler/Mesa/Gilbert with proximity to Hwy 101, Hwy 202 and Hwy 60.

Pieceful Solutions Charter School proposed program of instruction improves student achievement in the target population. The rationale for our approach and methodology is based on deep and detailed knowledge of our target population, research and evidence in support of the chosen curriculum, instructional methodology and assessment practices, as well as the successful founder's experience in educating autistic students. Specifically, the Pieceful Solutions education model improves student achievement in the target population by providing:

1. Carefully selected core and supplemental curriculum, aligned to Arizona Standards and proven by research to improve student achievement in students with autism.

2. Research-based and evidence-proven developmentally appropriate instructional strategies, specifically selected to deliver the curriculum, which have been proven to improve student achievement in students with autism.

3. Structured, highly individualized learning environment for its students with individually built positive reinforcements - based on our target population, we anticipate that most students will be working off of Individualized Education Plans (IEPs) that are specific to their needs.

   It is very common, when autistic students enroll at Pieceful Solutions, that their IEPs contain only behavioral goals and no mention of any learning goals, with majority of those goals being revised once a year. At Pieceful Solutions, students' IPEs cover all areas – academic and behavioral. Students have academic (math, reading, speech and language) and behavioral goals, which are constantly reviewed and updated, once the student masters them, or they get modified, if based on extensive data, gathered daily.

   Students who are not on an IEP will also have customized education plans in the form of Personalized Education Plans (PEPs). Aside from education in the areas of English/Language Arts, Math and Social Studies/Science, learners with ASD also need programming to meet their needs in the areas of communication/social/emotional and daily living skills. Each of these skills will be aligned with a specific Academic Standard within the IEP. Highly individualized systematic positive reinforcement and behavior plans will which include reward systems, carefully selected and designed reinforce student academic and social achievements. Additionally, the school has developed capacity to address the needs and service ELL autistic kids.

4. Data-driven culture for student achievement – rigorous and comprehensive assessments (initial, formative, summative) and extensive data analysis will provide students with the opportunity to achieve the highest standards of achievement.

   When looking at student achievement, Pieceful Solutions looks at growth in students in all areas. In special education, growth often refers to changes in performance on curriculum-based or norm-referenced measures designed to assess basic skills, regardless of the student's grade level. Although important for diagnostic purposes, these measures may not be the best for growth models. A basic skills focus can inaccurately measure the performance of students who have mastered grade level higher-order skills (such as problem solving) without mastering lower level skills (such as computation). Standards-based growth models do not measure growth toward individualized student goals. At Pieceful Solutions, student growth will be measured by progress on standards based models but more importantly on progress on individualized goals, which are aligned with standards.

5. Small class sizes with a small teacher/student ratio. Class size at Pieceful Solution Charter School is geared toward the highly individualized program of instruction and learning environment and is based on the developmental and academic needs of the students. High teacher/student ratio is needed to promote student academic success. Class size at Pieceful Solution Charter School will be: 1 teacher for 14-15 students with 3 to 4 instructional assistants for highly functioning students and 1 teacher for 8-9 students with 3 to 4 instructional assistants for higher needs students.

6. Highly qualified staff, specially trained and chosen for their exceptional skills and commitment to working with children with special needs and autism. Constant, ongoing education for all staff will ensure that all personnel are up-to-date on the latest research, best practices, techniques and methodologies. Highly qualified and skilled professionals including, but not limited to Physical Therapists, Speech Therapists, and Behavior Therapists, who treat students outside of the school will provide support to students in achieving their goals.

The success of Pieceful Solutions educational model in educating autistic kids is also evident in the academic results achieved by its students, enrolled in the private operation. When looking at student achievement, the Pieceful Solutions model looks at growth in students in all areas. In special education, growth often refers to changes in performance on curriculum-based or norm-referenced measures designed to assess basic skills, regardless of the student's grade level. Although important for diagnostic purposes, these measures may not be the best for growth models. A basic skills focus can inaccurately measure the performance of students who have mastered grade level higher-order skills (such as problem solving) without mastering lower level skills (such as computation). Standards-based growth models do not measure growth toward individualized student goals. At Pieceful Solutions, student growth is measured by progress on standards based models but more importantly on progress on individualized goals, which are aligned with standards.

During the 2012-2013 progress students at Pieceful Solutions mastered 252 IEP goals out of 336 written IEP goals with 80% mastery level, i.e. 70% of the kids with autism met 70% of their goals!

A.2 Target Population

Class size at Pieceful Solution Charter School is geared toward the highly individualized program of instruction and learning environment and is based on the developmental and academic needs of the students. High teacher/student ratio is needed to promote student academic success. Class size at Pieceful Solution Charter School will be: 1 teacher for 14-15 students with 3 to 4 instructional assistants for highly functioning students and 1 teacher for 8-9 students with 3 to 4 instructional assistants for higher needs students.