



## **Routing Baseline Review**

**Prepared for  
East Islip UFSD  
Islip Terrace, NY**

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**Submitted by:**

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## Executive Summary

Transfinder Professional Services was contracted to develop new routes in the Transfinder routing system based on reducing the walk zones for all students in grades 4 and 5 from one mile to one-half mile from the schools. Transfinder obtained an archive of current routes in the Transfinder routing system to begin the process. Routes at RC Kinney and JF Kennedy were then analyzed and restructured in the Transfinder routing system to balance ridership loading based on newly eligible students across the routes while maintaining acceptable student ride times. This report is generated to summarize the findings of reducing walk to school distances.

## Executive Conclusion

Transfinder Professional Services has modified existing routes to accommodate the potential additional riders created by reducing the walk to school zones for 4<sup>th</sup> and 5<sup>th</sup> grade students at RC Kinney and JF Kennedy. There were no additional routes created and students maintained their current bus stops. The routes were created using conservative transit time of 19 miles per hour to account for virtually all traffic conditions. Due to conservative route speeds, we do not believe that any route will actually run late in daily operation.

The addition of significant numbers of unfunded students (those students that reside within 1.5 miles of the school of attendance) will reduce New York State Aide due to a higher non-allowable pupil decimal percentage. There are currently 179 additional students that would be eligible for transportation. In those students, there are 25 families that currently have 3<sup>rd</sup> graders eligible for transportation while their siblings are currently not eligible. The expected reduction in funding difference is expected to be \$87,630.

***Transfinder was able to capture every bus stop the district currently uses. Those stops are all established in the proposed routes. A few additional stops were added in consultation with your transportation staff to handle students that were in areas not previously assigned to a bus.***

## Overview

As part of the scope of work, this report will attempt to provide all of the costs and transportation changes required to decrease the walk to school zones for grades 4 and 5 in the district.

A summary of the report includes the following based upon your district's data:

- Suggestions for routing changes to accommodate additional student riders
- A baseline summary of nationally recognized Key Performance Indicators (KPIs), outlining proposed changes to your routes to accommodate additional students;
- Student projections to determine if proposed route changes can potentially accommodate the additional students over the next five years

- Non-allowable pupil decimal calculations comparing current versus potential funding based on additional ineligible student riders.

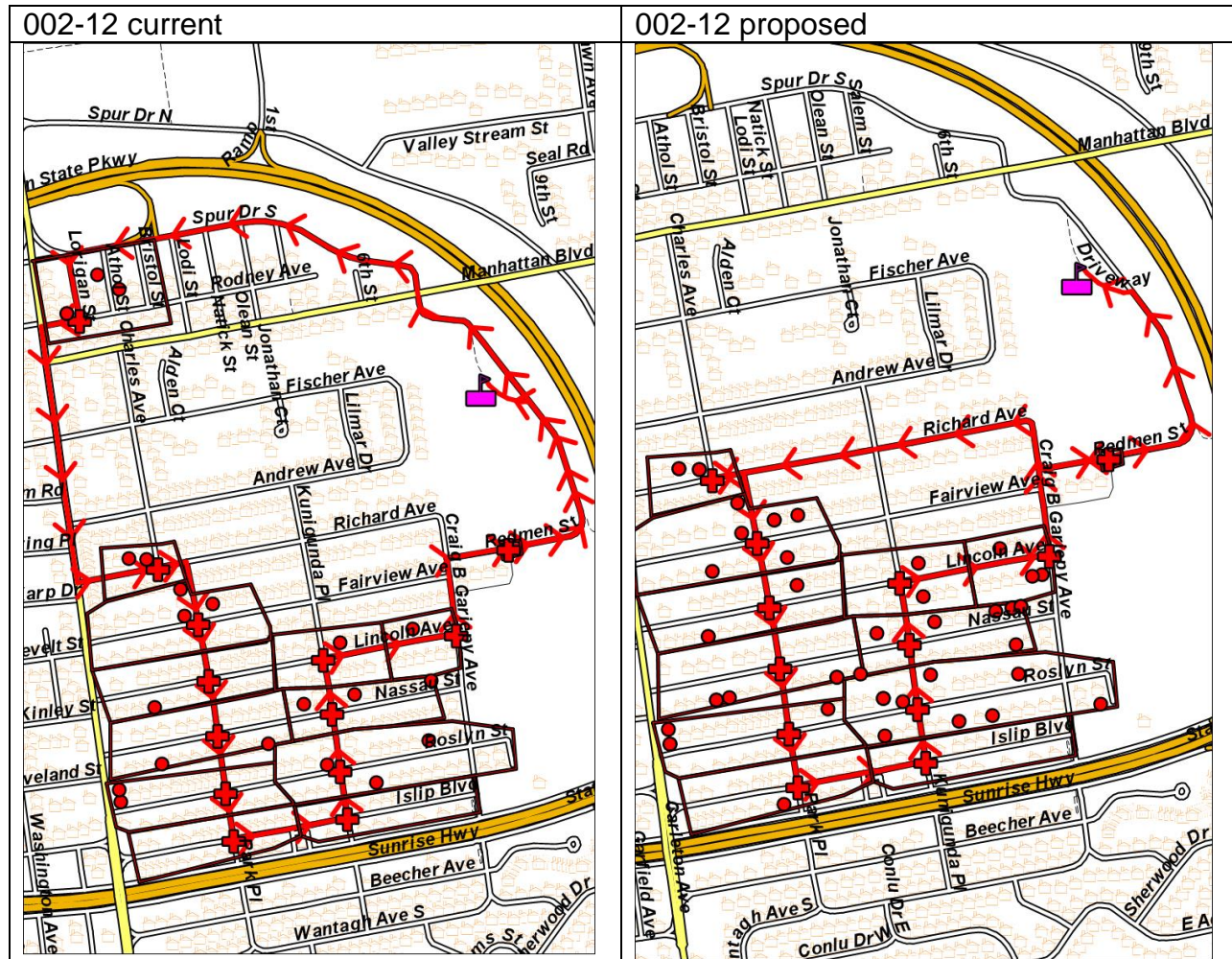
## Proposed Route Changes

The district's walk to school policy is being considered for 4<sup>th</sup> and 5<sup>th</sup> grade students. Reducing school walk zone policies from one mile to one-half mile for these students only effects RC Kinney and JF Kennedy Elementary Schools. Transfinder's Professional Services Team has created suggested routes to accommodate the additional students.

The following charts show the student ridership numbers today through next year with the inclusion of the reduced of the walk zone. The field labeled Current New Potential Riders shows the additional students created by the reduced walk zone with route modifications to handle the new students in place. The numbers for 2015-16 have students promoted to the expected grade to show new service expectations with additional modifications in place due to the student rollover.

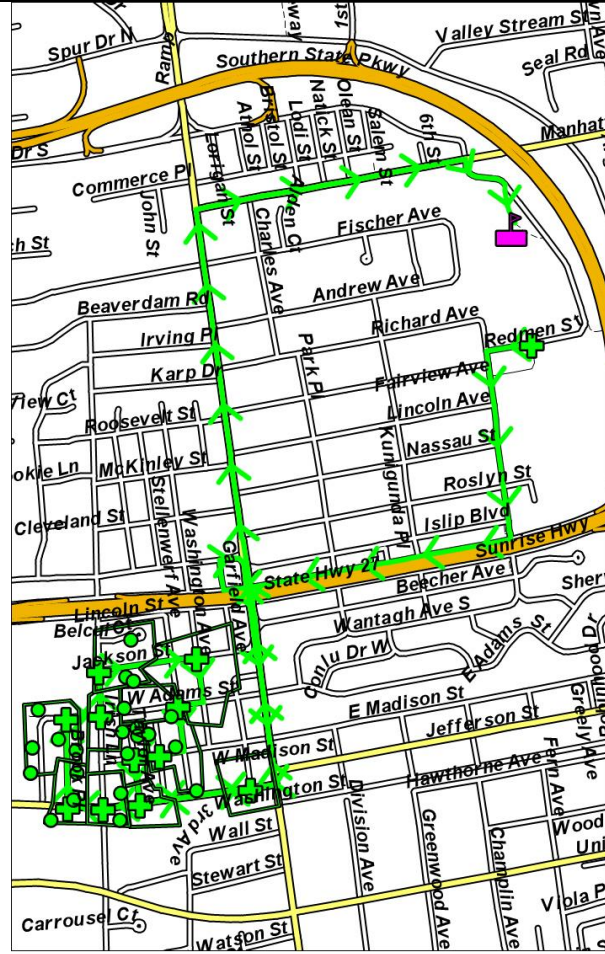
RC Kinney					
Route	Current Actual Riders	Current Potential Riders	Current New Potential Riders	Potential Riders 2015-16	Expected Actual Riders 2015-16
4	22	27	44	45	37
5	30	36	36	39	33
7	22	31	52	54	38
12	11	22	47	37	19
13	24	25	33	32	31
14	30	34	42	52	46
15	15	16	25	35	33
16	31	30	34	33	34
Totals	185	221	313	327	271
Additional Riders			92		

RC Kinney did not require significant changes to the routing structure since the current ridership numbers were fairly low. The additional students eligible with the reduced walk to school zones were generally accommodated on existing buses with only minor modifications. As previously noted, the 2015-16 riders in both charts have current students promoted to more accurately reflect future ridership.

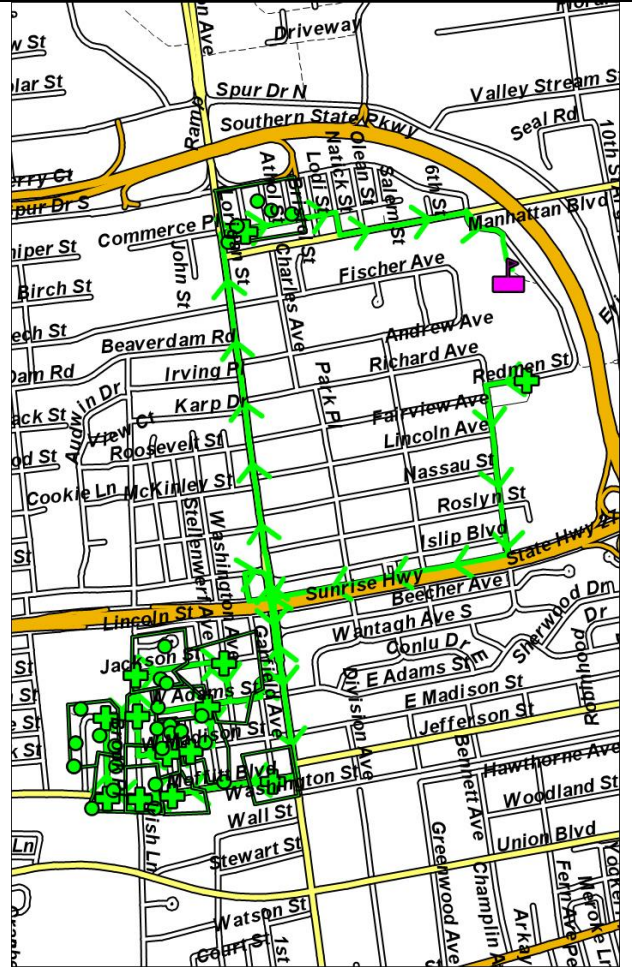




002-13 current



002-13 proposed



There were significant changes made to the JF Kennedy routing pattern to accommodate the additional students in the new walk to school zone. Several routes required major changes to balance the ridership across all of the routes at this campus.

JFK

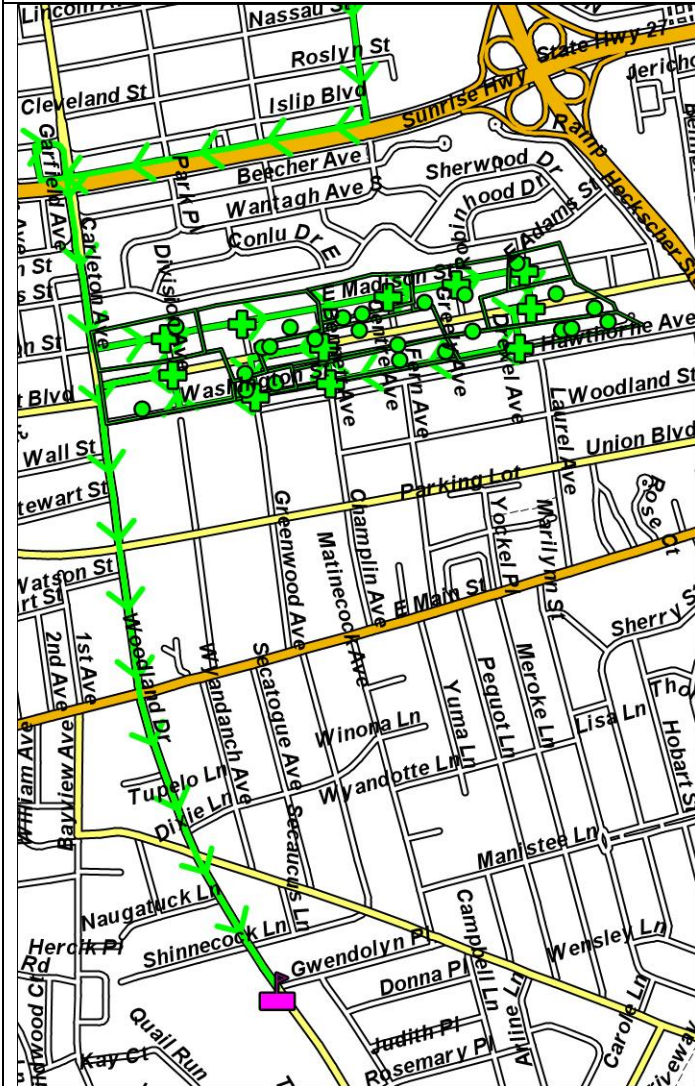
Route	Current Actual Riders	Current Potential Riders	Current New Potential Riders	Potential Riders 2015-16	Expected Actual Riders 2015-16
<b>6</b>	43	43	44	40	40
<b>8</b>	23	26	26	27	24
<b>9</b>	23	26	47	51	45
<b>10</b>	30	33	45	51	46
<b>11</b>	15	21	36	34	24
<b>18</b>	38	43	52	46	41
<b>19</b>	13	18	45	41	30
<b>21</b>	19	20	22	16	15
<b>22</b>	40	38	38	51	52
<b>Totals</b>	244	268	355	357	317
<b>Additional Riders</b>			87		

As previously noted, the 2015-16 riders in both charts have current students promoted to more accurately reflect future ridership.

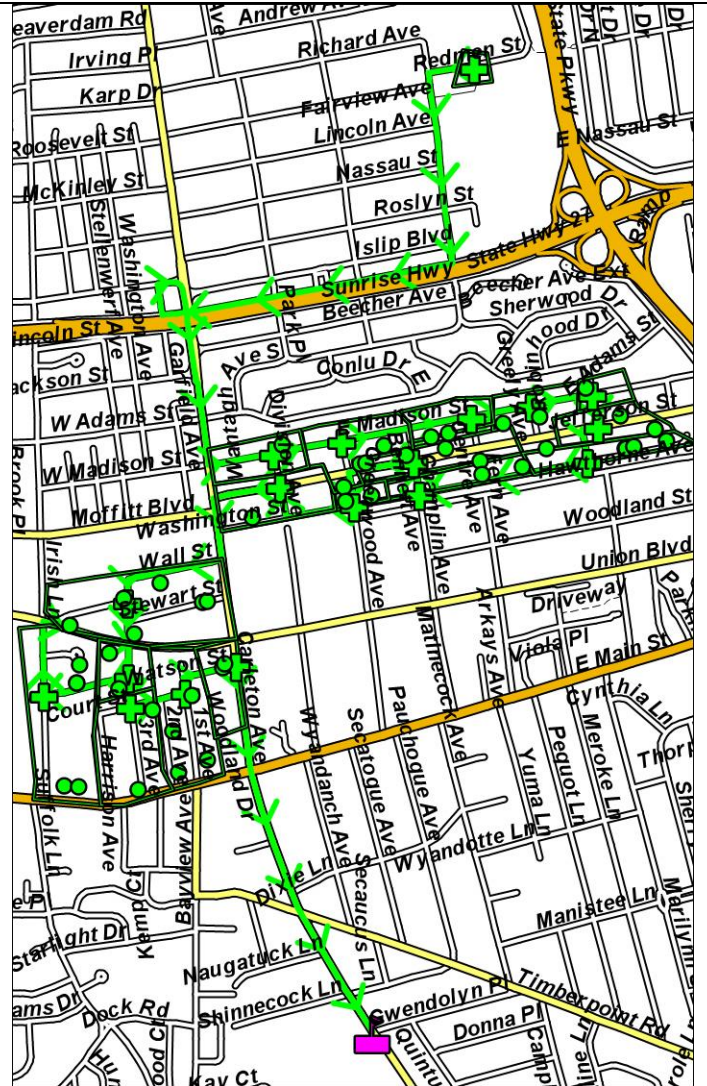




### 004-9 current



### 004-9 new

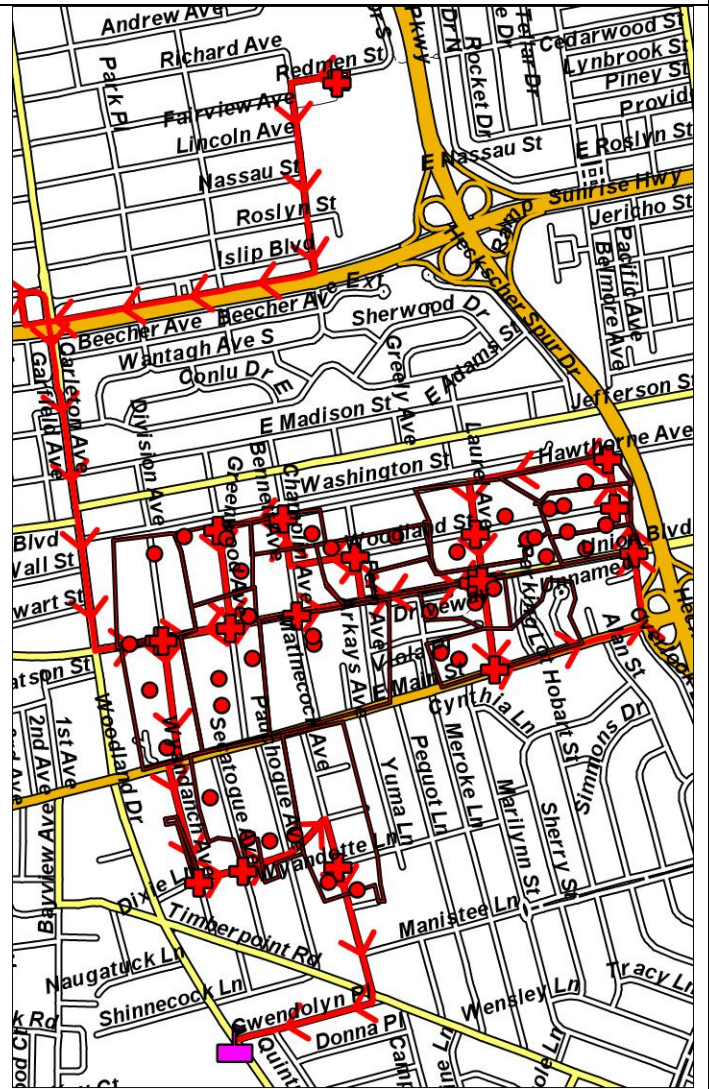




004-10 current

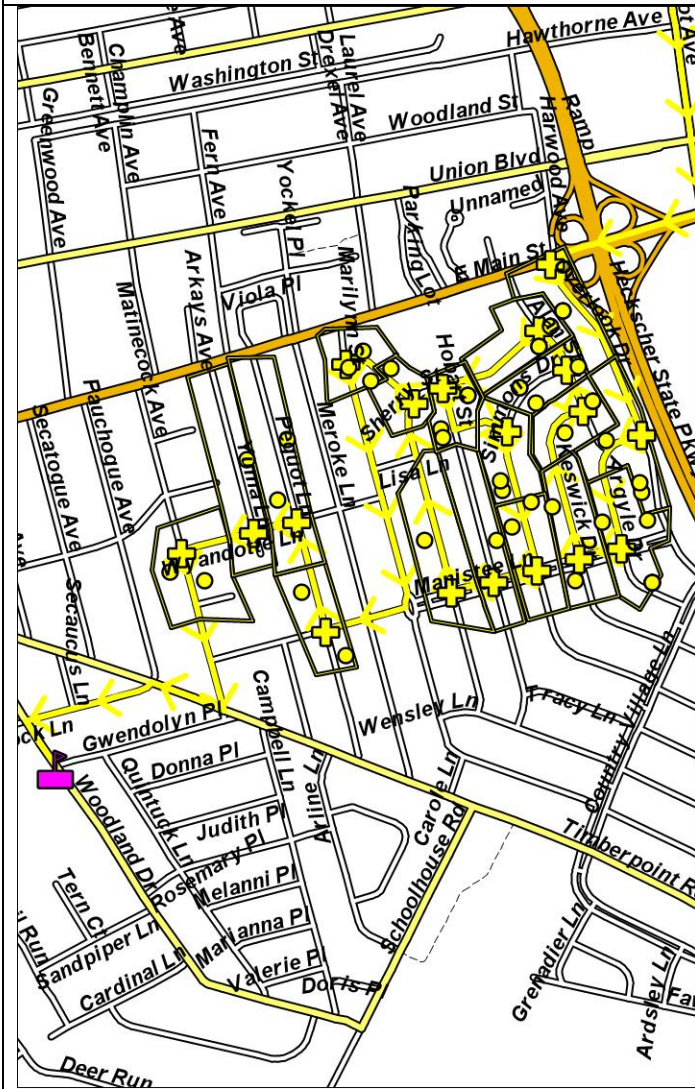


004-10 new

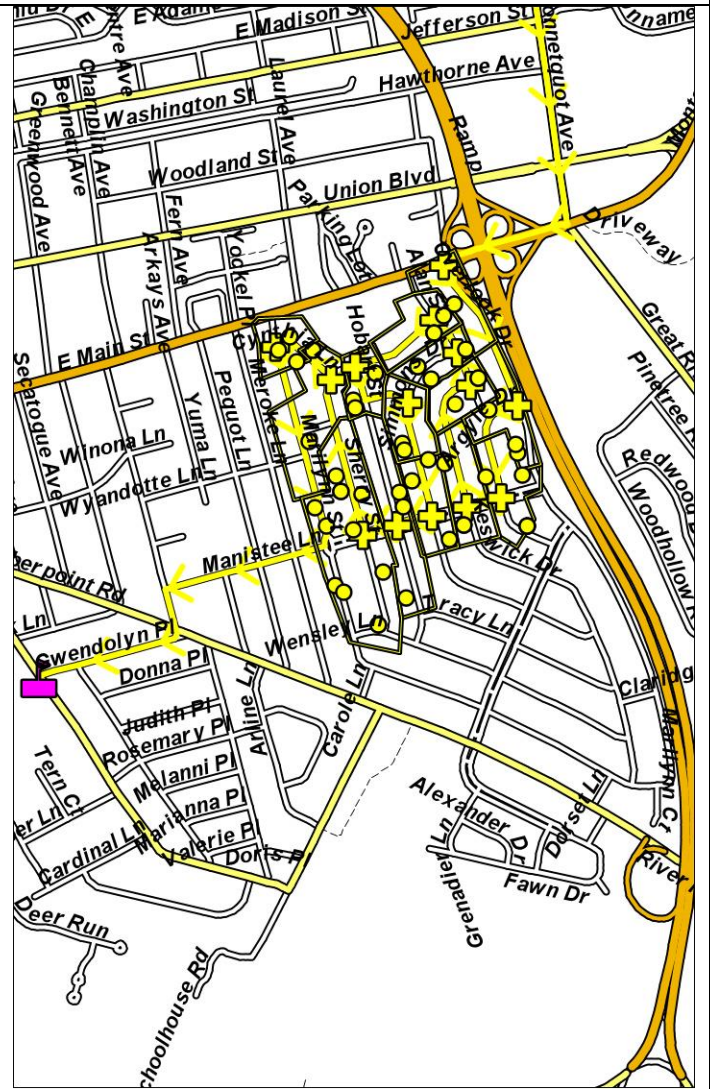




004-18 current

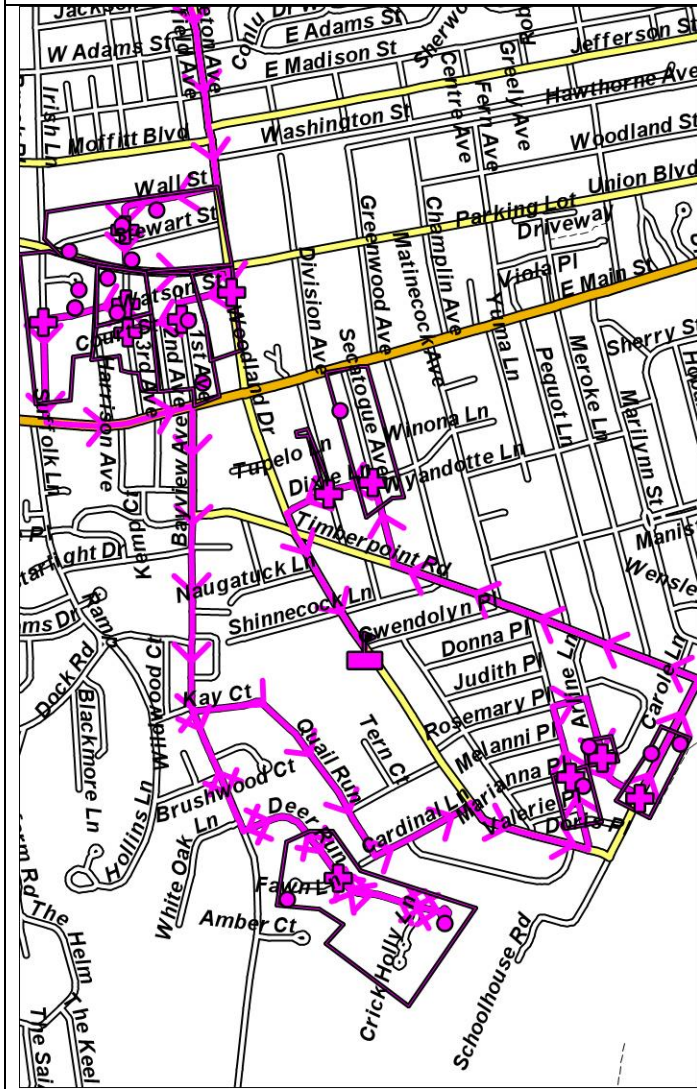


004-18 new

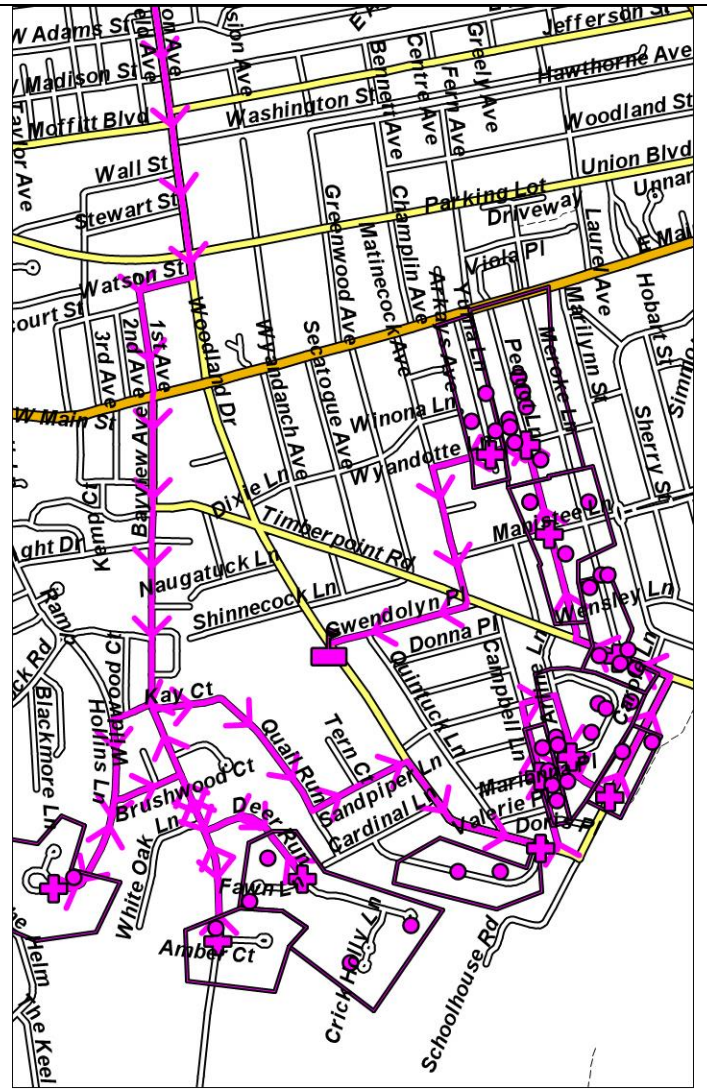




004-19 current



004-19 new

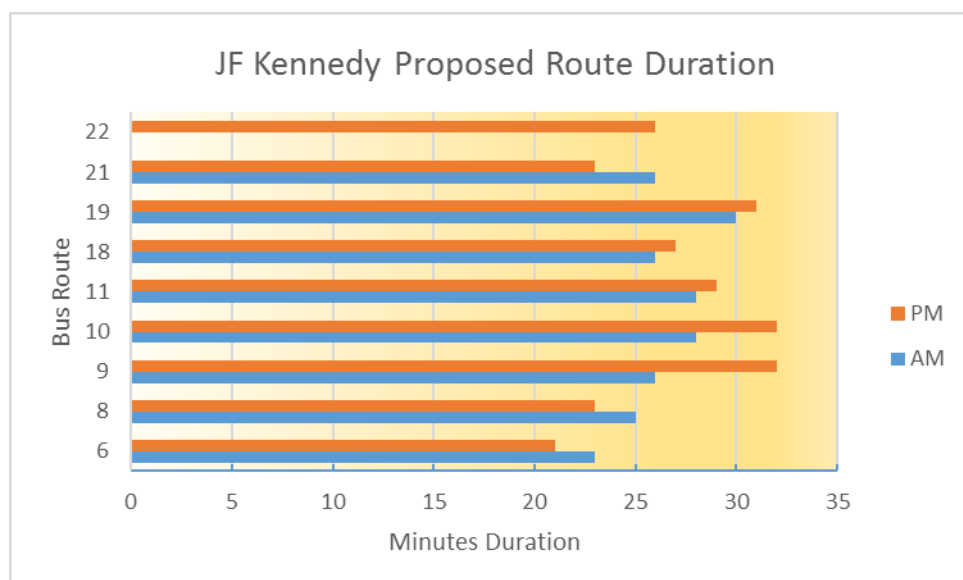
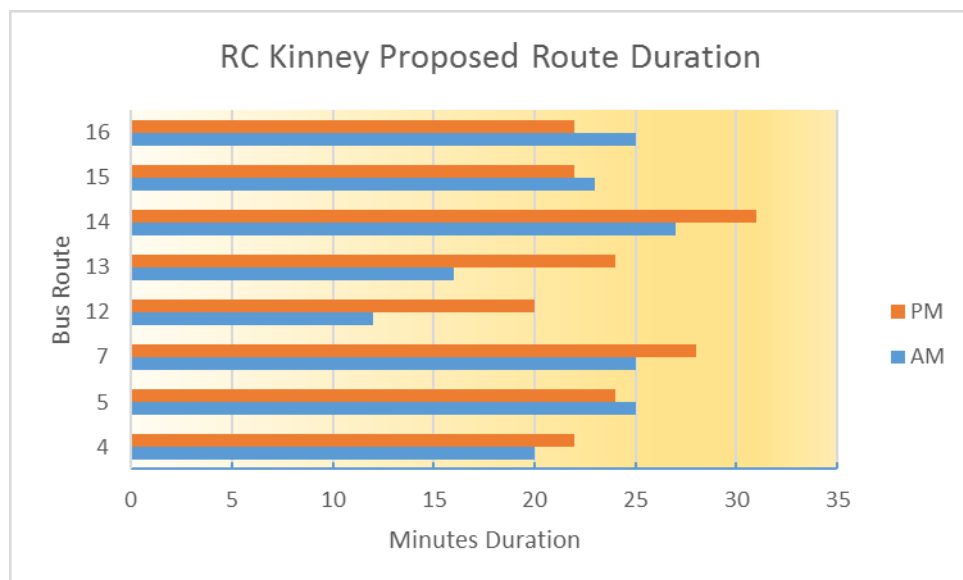




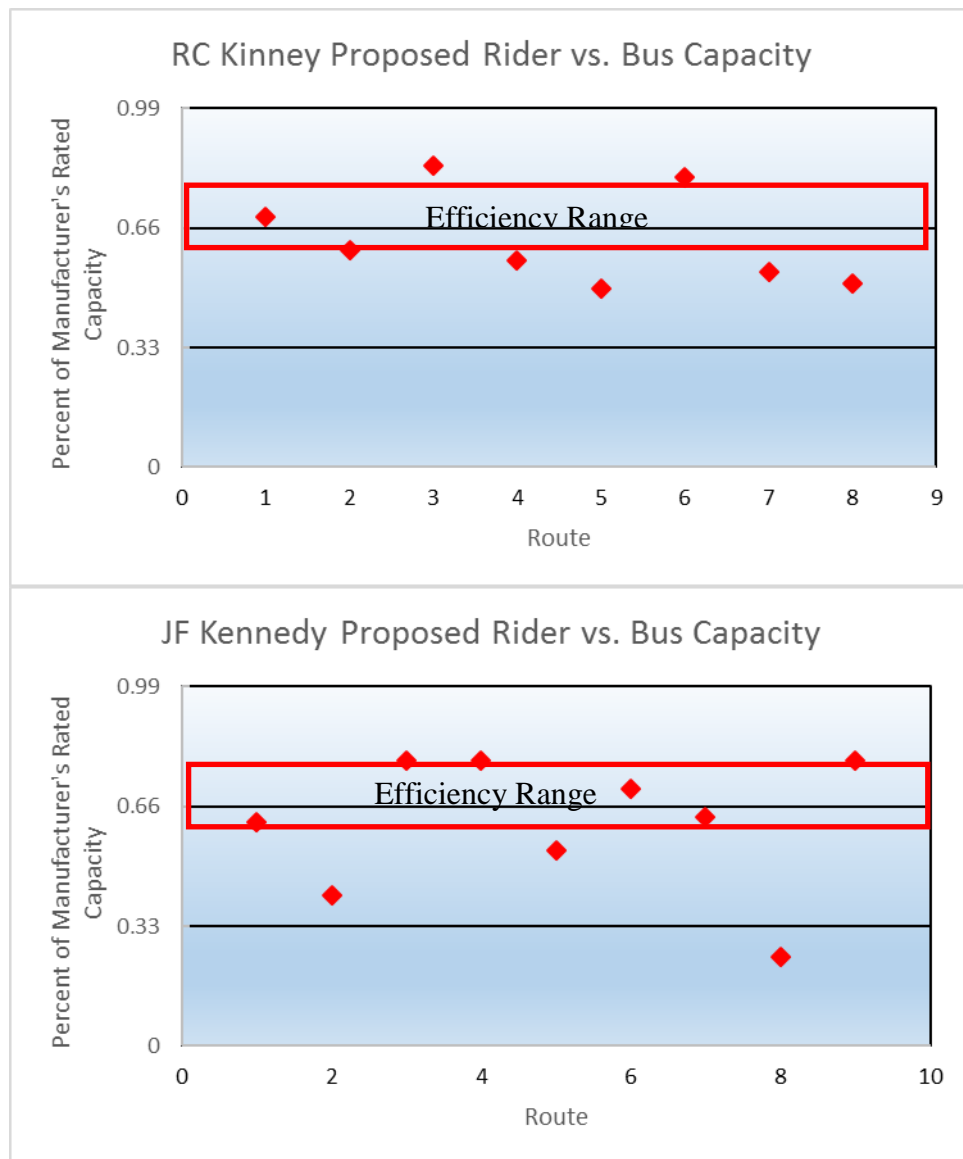
## Key Performance Indicators

Key Performance Indicators (KPIs) are a measurement of your current transportation operation. KPIs allow you to compare your operational performance year after year. They can also provide a comparison of your own performance in relation to other school districts of similar size, if that information is available. This report provides the route differences for you to use in further comparisons.

School bell times and student ride time form the basis for routing efficiency. The more time the bus has to pick up or deliver students, increases the potential for completely utilizing every bus. The following chart shows the run times with the “dead time” included. The buses are shown on the vertical axis and run minutes are shown on the horizontal axis for both current and proposed routes.



The following charts show the potential ridership counts by bus taken from district records. However, there are many student exceptions that could change the ridership counts. Actual daily riders are often significantly below the numbers shown. Recommended target actual ridership at the elementary level is between 66% and 80% of rated capacity of the bus or 3 riders in most of the seats and 2 in the rest.



## Student Projections

The Transfinder Professional Services team has run basic cohort survival projections for East Islip to make sure that the routes that were developed can handle the decreased walk zones for a prolonged period of time. The projections are basic and not intended to make exact predictions but rather to show the trends in the district when looking at grade level enrollments. The cohort survival method chosen equally distributes grade changes based on the previous 5 years history.

	<b>Grades 1</b>	<b>2</b>	<b>3</b>	<b>4</b>	<b>5</b>	<b>6</b>	<b>7</b>	<b>8</b>	<b>9</b>	<b>10</b>	<b>11</b>	<b>12</b>	<b>Totals</b>
<b>2010-11</b>	286	330	342	327	313	394	343	381	409	407	412	366	4310
<b>2011-12</b>	290	290	334	340	329	304	398	348	403	369	394	400	4199
<b>2012-13</b>	255	284	286	337	337	323	306	399	333	376	360	381	3977
<b>2013-14</b>	279	267	287	283	343	339	320	312	352	321	355	376	3834
<b>2014-15</b>	265	279	267	291	288	342	340	326	294	357	308	361	3718
<b>2015-16</b>	275	268	279	273	291	289	345	340	326	289	348	299	3621
<b>2016-17</b>	279	278	271	279	279	292	288	348	339	325	286	335	3599
<b>2017-18</b>	244	282	281	274	279	285	294	289	350	340	325	280	3523
<b>2018-19</b>	268	247	285	284	277	279	289	295	290	352	340	327	3534
<b>2019-20</b>	254	271	250	288	287	280	279	295	296	291	355	340	3486

These previous projections were utilized at grades 3, 4, and 5 to validate the general structure of the new potential routes. It is understood that student mobility may cause certain areas to have more or less eligible students each year. However, as the following chart demonstrates, the overall number of students at the elementary levels are expected to slightly decline over the next 5 years which should allow the potential routes to remain relatively stable over that time.

	<b>Grades 3</b>	<b>4</b>	<b>5</b>	<b>Totals</b>
<b>2014-15</b>	267	291	288	846
<b>2015-16</b>	279	273	291	843
<b>2016-17</b>	271	279	279	829
<b>2017-18</b>	281	274	279	834
<b>2018-19</b>	285	284	277	846
<b>2019-20</b>	250	288	287	825



## **New York Non-Allowable Pupil Decimal**

Reducing the walk zones for ineligible students under New York school transportation funding guidelines changes the Non-allowable pupil decimal ratio. This type of change in the non-allowable pupil decimal ratio diminishes transportation funding for the district in the future.

Student demographics and funding eligibility change year by year. In order to determine the impact of the potential reduction in walk to school zones for grade 4<sup>th</sup> and 5<sup>th</sup>, the non-allowable pupil decimal ratio was calculated for current and then modified school walk zone routes. The non-allowable pupil decimal for current routes without any changes is 0.1123002 with eligible students calculated in accordance with district parameters. If the walk to school zones are reduced for 4<sup>th</sup> and 5<sup>th</sup> grade the new non-allowable pupil decimal is 0.1423389. The walk zone change generates a difference of 0.030039 in the pupil decimal ratio based on current routes and eligible students. This increase in the non-allowable pupil decimal should reduce district funding in the future.

**EAST ISLIP UFSD  
TRANSPORTATION AID ANALYSIS**

			<b>2011/12 ST3</b>	<b>Current Routes Transfinder</b>	<b>Revised Routes Transfinder</b>
1	Non-Allowable Pupil Decimal (reduction to State Aid) Regular Routes & Ch 173 Pass Thru  (Schedule J)		9.30%	11.23%	14.23%
			4,673,648	4,673,648	4,673,648
2	Computer Bus Routing License		3,750	3,750	3,750
			4,677,398	4,677,398	4,677,398
3	Non Allowable Pupil Deduction		434,998	525,273	665,776
4	Contract Exp's Approved for Aid	A	4,242,400	4,152,125	4,011,622
	Personal Services (ST-3 Line 300)		86,983	86,983	86,983
	Employee Benefits (Form FT Line 117)		25,194	25,194	25,194
	Supplies/Mat'ls (ST-3 Line 305)		500	500	500
	Contractual Exp's (ST-3 Line 304)		22,000	22,000	22,000
			134,677	134,677	134,677
	Non Allowable Pupil Deduction		12,524	15,124	19,170
5	District Operating Expense Approved for Aid	B	122,153	119,553	115,507
	Supervisor's Office Salaries:				
6	Total District Operated, Contract, Public Exp	A+B	4,364,553	4,271,678	4,127,130
	Regular Routes & Ch 173 Pass Thru + Contract Exp's for Other Purposes + Computer Bus Routing License				
7	+ Total Operating Expenditures from the GF		5,008,728	5,008,728	5,008,728
8	%age of Supv Office Salaries (6/7)		87%	85%	82%
9	Salaries for Supv Office + Benefits		208,539	208,539	208,539
10	Exp's of Supv Office Approved for Aid	(8*9) C	181,718	177,852	171,834
11	Total Transportation Expense Approved for Aid	A+B+C	4,546,271	4,449,530	4,298,963
	State Share Ratio for Transportation Aid		0.582	0.582	0.582
	Transportation Aid Eligible		2,645,930	2,589,626	2,501,997
	Potential Aid Loss as Compared to Current Aid			(56,303)	(143,933)

The following page outlines some of the Professional Services offered by Transfinder that may be helpful to your district.





## Professional & Implementation Services Management Team



**Dan Roberts, Director, Professional Services**, is responsible for developing and expanding the company's professional services for school districts throughout North America. He leads the company's in-house staff as well as taps into a network of industry experts to provide comprehensive services for the efficient management of student transportation operations. From routing and logistics services to demographic analyses, management training, transportation consolidation, and benchmarking studies, Roberts enables districts to meet new challenges arising from budget shortfalls or growth demands.

Dan is a former Executive Director for Long-range Planning and Business Systems for Round Rock Independent School District in Texas, is recognized for his pioneering efforts in developing computerized routing systems for school districts. He also is called upon by national and state organizations to establish standards and conduct independent management audits of district transportation operations in order to help districts incorporate best practices into their transportation operations. Dan is the author of "Best Practices in Student Transportation" and teaches college courses in pupil transportation management.



**Terrell "T" Doolen, Implementation Services Manager**, is responsible for customized advice, training, and support for clients at their sites on specific projects, including advanced training sessions, project management, accelerated implementation services, or route reduction and efficiency planning. Prior to assuming this role in professional services, Doolen also oversaw the technical support staff at Transfinder for three years. He has over ten years of

experience in customer service and technical support, and was influential in reshaping and improving the customer service that Transfinder provides. Prior to joining Transfinder, Doolen worked at Yahoo, Inc. in California. He holds a B.S. in secondary education from the University of Illinois at Urbana-Champaign.

## **Other Transfinder Professional Services available:**

We provide implementation services for the full suite of our solutions, including our fleet maintenance, field trip, and AVL software for seamless GPS integration with our routing system.

### **1. New Route Creation Based on Changing Attendance Patterns**

Demographic shifts and student matriculation changes often result in the opening of a new school or the consolidation or closing of schools. This dramatically affects a district's routing and scheduling landscape. We review your new data to assess the impact on your transportation needs; create new routes and bus runs; and designate appropriate bus stops to accommodate change, and reduce mileage and ride times.

### **2. Route Analysis for Greater Efficiencies & Cost Savings**

Increasing routing and scheduling efficiencies has a cumulative and positive impact on your transportation budget. We analyze your data, current routes, and bus runs, and recommend incremental changes that yield significant savings. These may include adjusting bell time windows; student ride times; bus capacity based on actual ridership; walk-to-stop distances and routing parameters, and non-required services.

### **3. Continuous Routing Services**

Our Professional Services staff is available throughout the country to provide routing services, which include (1) yearly route updates to improve efficiencies; (2) continuous route updates as needed; and (3) a subscription service that allows you to call upon our expertise as needed. We offer cost-effective solutions for unexpected changes in budget or personnel that ensure consistency in your operation.

## **DEMOGRAPHIC ANALYSIS FOR BOUNDARY PLANNING**

When your district experiences growth or consolidation, we help you evaluate your student population demographically and geographically based on available local knowledge and historical data. We also will plot and plan for future growth over the next five years. By analyzing your existing or changing school placements, we will then enable your Administrators and Board Members to make policy shifts that have positive effects on the community now and in the future.

## **MANAGEMENT TRAINING**

Several of our Professional Services staff have managed transportation departments and can provide management training for directors throughout the country. We assess your day-to-day operational challenges and provide customized management training to ensure your success.

## **TRANSPORTATION CONSOLIDATION STUDIES**

Economic challenges are causing school districts to evaluate consolidating services, including transportation. Our Professional Services staff has worked with school districts in several states on opportunities for consolidation that ensure local control, while leveraging centralized routing and scheduling expertise. Our studies enable participating school districts to achieve economies of scale through careful analysis, collaborations, and agreements.