

Cypress-Fairbanks ISD Department of Transportation



Facilities & Equipment Recommendations

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History

CFISD – 1974

Student Enrollment – 11,758ⁱ

Campuses – 13ⁱⁱ

Estimated number of students transported – 8,800

Estimated number of route buses - 117

Falcon Transportation Center – 1974

11430 Falcon Road

Facility design:

- 152 protected school bus parking spaces
- 10 shop bays
- 4 body shop bays

The Falcon Center currently houses:

- 222 school buses
- 1 Community Programs Early Learning Center

It was recommended by the department in 2001 to relocate the district's Security Department portable buildings from the Falcon Transportation Center to provide an additional 15 to 20 bus parking spaces. The portable buildings were relocated; however, in 2007 another portable building was positioned on the property to house a daycare center for children of school bus drivers which is now the Community Programs Early Learning Center.

Seventy-two additional unprotected bus parking spaces were made available by relocating employee parking to Pridgeon Stadium.

CFISD – 1981

Student Enrollment – 24,978

Campuses – 24

Estimated number of students transported – 18,750

Estimated number of route buses – 250

Telge Transportation Center – 1981

11010 Telge Road

Facility design:

- 132 protected school bus parking spaces
- 6 shop bays

The Telge Center currently houses:

- 232 school buses
- 2 Community Programs Early Learning Centers

A gravel-based stabilized parking area was added in 2000 and has been expanded over the years to accommodate 100 additional unprotected bus parking spaces.

CFISD – 1985

Student Enrollment – 30,386

Campuses – 32

Estimated number of students transported – 22,800

Estimated number of route buses - 304

Barker-Cypress Transportation Center – 1985

17522 Liner Lane

Facility design:

- 120 protected school bus parking spaces
- 10 shop bays

The Barker-Cypress Center currently houses:

- 250 school buses
- 2 Community Programs Early Learning Centers

A gravel-based stabilized parking area was added in 1998 to accommodate growth and has expanded over the years to over 100 unprotected bus parking spaces. Employee parking has been moved along interior fencing and along public street to accommodate over 20 additional unprotected bus parking spaces.

Due to the number of school buses and heavy traffic, the transportation department employs a CFPD officer to expedite the movement of buses from Liner Lane.

CFISD – 2005

Student Enrollment – 87,452

Campuses – 70

Number of students transported – 64,000

Number of route buses – 581

Eldridge Transportation Center – 2005

7500 N. Eldridge Parkway

Facility design:

- 192 protected school bus parking spaces
- 10 shop bays

The Eldridge Center currently houses:

- 237 school buses
- 1 Community Programs Early Learning Center

Forty-five unprotected school bus parking spaces were originally designed and constructed.

Dynamics - 2013

District:

Student Enrollment – 112,105

Campuses – 85

Department:

4th Largest Fleet in Texas

32nd Largest Fleet in the nationⁱⁱⁱ

Transportation Centers – 4

Students Transported – 70,693

Largest school district student transporter in Texas.^{iv}

School District	Route Buses	Students Transported	Students Transported per bus daily
Dallas County Schools	1,398	66,181	47
Houston ISD	890	30,000	34
Northside ISD	750	65,000	87
Cypress-Fairbanks ISD	650	70,693	109

Most efficient of the largest school districts in number of students transported per bus daily in Texas.

12th Largest school district student transporter in the nation.

School District	Route Buses	Students Transported	Students Transported per bus daily
New York City Dept. of Education	7,818	162,000	21
Gwinett County Public Schools	1,709	125,791	74
Clark County School District	1,375	95,601	70
Prince George's County Public Schools	1,146	85,000	74
Montgomery County Schools	1,112	102,656	92
Fairfax County Public Schools	1,080	133,845	124
School Board of Broward County	1,058	80,000	76
Hillsborough County Public Schools	996	92,000	92
Charlotte-Mecklenburg Schools	992	126,000	127
Cobb County School District	911	86,642	95
Fulton County Schools	776	78,000	101
Cypress-Fairbanks ISD	650	70,693	109

3rd in efficiency among the 12 largest school district transporters in number of students transported per bus daily in the nation.

CFISD - 2013

Annual Field Trips – Over 13,000

Average Field Trips per Day – 65

Total Buses – 935

Route Buses – 650

Spare & Field Trip Buses – 249

Specialty Buses – 27

Type “A” Buses (19 passengers or less) – 9

Original facilities design capacity for protected school bus parking:

Falcon -	144
Telge -	132
Barker -	120
Eldridge -	<u>192</u>
Total -	588

The district removed service for ineligible students (students who reside within two-miles of their home campus and not within a district-defined hazardous area for which the district does not receive funding) in 2009. At that time, the department was able to reduce the number of routes by 44 as a cost-savings measure.

Facilities Summation & Recommendations

Summation:

If the district reinstates the bus service for ineligible students for the 2014-2015 school year, the department has projected an additional 54 route buses will be required for the ineligible service.

The Transportation Centers were designed to house the administrative, supervisory and support personnel in correlation with the number of protected school bus parking spaces. The Falcon, Telge, and Barker-Cypress Transportation Centers were also built with an interior daycare room for school bus drivers’ children. Not only has the transportation fleet of school buses exceeded the original design capacities of our land-locked transportation centers by 346 school buses, the personnel, office and work space required to support our department have exceeded our facilities as well. Over 50 route buses are housed unprotected causing drivers and attendants to conduct required pre-trip and post-trip school bus inspections during inclement weather and/or in extreme temperatures. Over 100 route buses will be housed unprotected with the reinstatement of less than 2- mile service beginning the 2014-2015 school year.

The daycares were disbanded in 1996 and the rooms have been utilized to house the office and work stations necessary for the growth of the department. Due to the limited number of shop bays and the increased number of vehicles, the transportation department implemented a night-shift for technicians and shop personnel at the Falcon Transportation Center in 2001 in an effort to facilitate the repairs and maintenance of district vehicles.

Based on the current bus inventory and design capacity of our facilities, an additional transportation center is currently needed. Additional facilities increase routing efficiencies. Due to the anticipated growth of the department and district, an additional transportation center will be needed every five years based on a design capacity of 150 school buses.

Recommendations:

- It is recommended to reinstate bus service for ineligible students beginning with the 2014-2015 school year. According to the U.S. Department of Transportation, school buses are the safest mode of transportation for getting students to and from school and home safely.^v
- **2 New Transportation Centers** – construct one new facility in the northwestern area of the district and one in the southwestern area of the district.
 - o Begin construction of the first facility similar in design to the Houston I.S.D. Northwest Transportation facility immediately upon receipt of funds to include the following:
 - administrative suite to include the director, fleet supervisor, assistant director of operations, payroll, routing, field trip, and human resources; and a 6-bay body and upholstery shop that includes a modern paint booth and bus/auto wash.
 - o Begin construction of the second facility when route buses exceed 820 (projected SY 2019-2020).
 - o It is recommended that future transportation centers be constructed to accommodate 200 protected route buses and staff.

Location	Begin Construction	Open	Projected Cost
Southwest	2015	2016	\$25,664,296
Northwest	2020	2021	\$35,995,502
Total			\$61,659,798

School Bus & Equipment Replacement, New Purchases & Estimated Costs

In 2012, it was determined to remove school buses from routes that were more than 15 years of age to help minimize maintenance costs based on a report by the Texas Legislative Budget Board. The report references a 2002 position paper from the National Association of State Directors of Pupil Transportation Services that proposes a 12 to 15 year life-cycle for Type “C” school buses based on two independent studies in California and Washington.^{vi} The studies determined the life-cycle of a Type “C” school bus to be 12 to 15 years due to operating costs increasing significantly after twelve years of use. The study also proposes replacement of school buses when there is a “significant” safety improvement or when maintenance expenses exceed the cost of the vehicle.^{vii}

The table below demonstrates the number of school buses and estimated cost associated with a 12-year school bus replacement plan, student growth through 2020 and the reimplementation of transporting ineligible students (students who reside within two miles of their home campus and not in a district-defined hazardous area):

Year	Number of Buses		*Estimated Cost
2015 - 2016	Growth	12- Year Replacement	
53 Pax	4	63	\$6,753,600
71 Pax	15	204	\$21,429,150
Total	19	267	\$28,182,750

2016 - 2017			
53 Pax	6	0	\$622,944
71 Pax	17	0	\$1,713,354
Total	23	0	\$2,336,298
2017 - 2018			
53 Pax	3	0	\$320,816
71 Pax	40	0	\$4,152,363
Total	43	0	\$4,473,179
2018 - 2019			
53 Pax	4	5	\$991,322
71 Pax	8	30	\$4,063,087
Total	12	35	\$5,054,409
2019 - 2020			
53 Pax	6	22	\$3,176,636
71 Pax	7	39	\$5,066,028
Total	13	61	\$8,242,664
2020 - 2021			
53 Pax	4	21	\$2,921,371
71 Pax	20	59	\$8,961,362
Total	24	80	\$11,882,733
Grand Total	134	443	\$60,172,033

*Estimated cost based on 3% annual price increase.

Alternate: 15-Year Replacement Plan

The table below is provided as an alternate and demonstrates the number of school buses and estimated cost associated with a 15-year school bus replacement plan, student growth through 2020 and the reimplementation of transporting ineligible students (students who reside within two miles of their home campus and not in a district-defined hazardous area):

Year	Number of Buses		*Estimated Cost
	Growth	15- Year Replacement	
2015 - 2016			
53 Pax	4	37	\$4,132,800
71 Pax	15	165	\$17,613,000
Total	19	202	\$21,745,800
2016 - 2017			
53 Pax	6	26	\$3,322,368
71 Pax	17	0	\$1,713,354
Total	23	26	\$5,035,722

2017 - 2018			
53 Pax	3	0	\$320,816
71 Pax	40	39	\$8,200,916
Total	43	39	\$8,521,732
2018 - 2019			
53 Pax	4	0	\$440,588
71 Pax	8	0	\$855,387
Total	12	0	\$1,295,975
2019 - 2020			
53 Pax	6	0	\$680,708
71 Pax	7	0	\$770,917
Total	13	0	\$1,451,625
2020 - 2021			
53 Pax	4	5	\$1,051,693
71 Pax	20	30	\$5,671,748
Total	24	35	\$6,723,441
Grand Total			
	134	302	\$44,774,295

*Estimated cost based on annual 3% price increase.

Student/Driver Transit Video Surveillance Systems:

Each district school bus assigned to a route is equipped with a digital student/driver video surveillance system to promote student safety, protect drivers from fraudulent claims, enforce good driving practices and deter vandalism. As with most computerized systems, hard-drives and other components must be updated and/or replaced due to failure and/or obsolete technology. A complete new system with three (3) cameras and digital video recorders (DVR's) costs approximately \$2,200 installed. Two-hundred of these DVR's are outdated (7-plus years old) and need to be replaced due to failure with the newer digital video recording (DVR) system technology. 320 systems will need to be replaced or upgraded in 2016 but will be included in the purchase of new school buses. The cameras of these systems are in good condition, do not need replacing and are expected to last the life expectancy of the school buses. The upgraded DVR's cost approximately \$1,100 - \$1,200 for a total of \$220,000 to \$240,000.



FlexPlay / TR3600HR and FC6000 cameras / Hybrid Quest and SDX DVRs

Automotive and Heavy Duty Recovery Vehicles:

With the addition of the police department and various other department vehicles, the district currently owns over 460 automotive and light-duty vehicles and trailers. To properly tow these vehicles due to accidents or breakdowns, recovery vehicles are required. The transportation department currently owns three heavy-duty wreckers that vary in age from 26 years to 31 years that are unable to safely and properly tow light vehicles.

Sample vehicle and approximate cost: \$94,500



Sample vehicle and approximate cost \$115,000

Global Positioning Systems (Ground Traffic Control):

Global Positioning Systems (GPS) for school buses are utilized to track fleet operations and data and are capable of tracking student loading and unloading. Global Positioning Systems will provide the following benefits to not only increase efficiency but more importantly the safety of our students and employees:

- the ability to track every school bus through real-time data;
- the ability to receive instant notification when a school bus is “off-route”;
- the ability to dispatch closest bus to transport students during vehicle breakdowns or accidents to reduce student wait-time at bus stop locations;
- the ability to monitor employee performance by speed, time variations, excessive idling and determine actual on-time calculations; and
- the ability to serve our customers (students, parents and campuses) with real-time accurate vehicle location and information.

These systems can be purchased for approximately \$1950 per bus with additional administrative hardware for \$32,000.^{viii}



Bus/Automotive Wash System:

Three of the district’s bus washes are outdated and obsolete as they were installed when the transportation facilities were built. Parts are no longer available and are fabricated by the only vendor qualified to work on the equipment.



Sample system and approximate cost per system - \$132,000

School Bus and Equipment Conclusions & Recommendations

Conclusions:

School buses have evolved and continue to evolve rapidly in many areas of technology and emissions. Technicians utilize laptops to diagnose codes and ascertain problems as electronic engines and air-conditioning have become standard equipment. Replacing buses after twelve years of usage enables newer technology and safety equipment to assimilate more rapidly throughout the fleet while reducing maintenance costs.

Grants have been received and utilized over the years to install Diesel Oxidation Catalysts (DOF's) on older buses to reduce exhaust emissions. Newer buses (2008 and newer) are equipped with Diesel Emission Filters (DEF's) to meet current and more stringent Environmental Protection Agency (EPA) emission standards. Although our older buses exceed production year emission standards and have reduced exhaust emissions, they do not meet the current EPA standards.

Priority I Recommendations and Costs through 2020

- Construct two new facilities.	\$61,659,798
- Purchase school buses for growth and 12-year replacement cycle:	\$60,172,033
- Purchase 200 updated digital video recorders:	\$240,000
- Purchase GPS for all route buses and 50 spare buses with administrative hardware:	\$1,689,500
Total:	\$123,761,331

Priority I Alternate with 15-Year Replacement Cycle

- Construct two new facilities.	\$61,659,798
- Purchase school buses for growth and 15-year replacement cycle:	\$44,774,295
- Purchase 200 updated digital video recorders:	\$240,000
- Purchase GPS for all route buses and 50 spare buses with administrative hardware:	\$1,689,500
Total:	\$108,363,593

Priority II Items

- Purchase an automotive/light-duty and a heavy-duty wrecker and add/replace oldest heavy-duty wrecker:	\$209,500
- Purchase 3 Bus/Auto washes to replace current washes at Falcon, Telge and Barker:	\$396,000
Total:	\$605,500

Notes:

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- ⁱ Cypress-Fairbanks ISD. (2008). *About CFISD*. Retrieved October 29, 2013, from CFISD.net:
<http://www.cfid.net/aboutour/history.htm#soaring>
- ⁱⁱ Cypress-Fairbanks ISD. (2008). *About CFISD*. Retrieved October 29, 2013, from CFISD.net:
<http://www.cfid.net/aboutour/history.htm#soaring>
- ⁱⁱⁱ Thomas McMahon. (2013, October). SBF's Top 100 School District Fleets. *School Bus Fleet*, pp. 27-34
- ^{iv} Thomas McMahon. (2013, October). SBF's Top 100 School District Fleets. *School Bus Fleet*, pp. 27-34
- ^v United States Department of Transportation. *Child Safety Research in School Buses*. Retrieved December 20, 2013, from dot.gov:
<http://www-nrd.nhtsa.dot.gov/pdf/esv/esv19/05-0325-W.pdf>
- ^{vi} Texas Legislative Budget Board. (2009, January). *Texas School District Transportation Services*. Retrieved October 30, 2013,
from Legislative Budget Board: www.lbb.state.tx.us
- ^{vii} National Association of State Directors of Pupil Transportation Services. (2002, January). *NASDPTS Position Papers*. Retrieved
October 31, 2013, from NASDPTS: <http://www.nasdpts.org/Documents/Paper-BusReplacement.pdf>
- ^{viii} Zonar Systems, (2014, January). *Ground Traffic Control*. Retrieved January 7, 2014, from ZONAR SYSTEMS:
<http://www.zonarsystems.com/products/ground-traffic-control-fleet-management/>