

Facility Mechanical and Energy Assessment Evaluation For

CARROLL INDEPENDENT SCHOOL
DISTRICT

September 8, 2014



IEG

District Overview

Introduction

Global Recommendations

- CONTROLS RETRO-COMMISSIONING OF DDC SYSTEM FOR HVAC SYSTEMS OPTIMIZATION
- GEOTHERMAL RETROFITS FOR SELECT CAMPUSES
- WATER HEATER REPLACEMENTS WITH MORE EFFICIENT SYSTEMS
- PLUMBING FIXTURE UPGRADES FOR WORN FIXTURES AS AREAS ARE RENOVATED
- ENERGY EFFICIENCY IMPROVEMENTS FOR INTERIOR LIGHTING SYSTEMS VIA AUTOMATIC CONTROLS AND LED LIGHTING RETROFIT
- SITE AND EXTERIOR BUILDING LED LIGHTING RETROFIT FOR ENERGY EFFICIENCY IMPROVEMENTS AND REDUCED MAINTENANCE
- LIFE SAFETY SYSTEMS IMPROVEMENTS FOR EMERGENCY EGRESS LIGHTING VIA SYSTEM REPLACEMENTS AND UPGRADES
- FIRE ALARM AND FIRE SPRINKLER SYSTEM REPLACEMENTS AND UPGRADES FOR CONTINUED MAINTENANCE OF LIFE SAFETY SYSTEMS
- SOLAR INCENTIVES AND REBATES WITH POWER COMPANY, AND WITH STATE AND FEDERAL AGENCIES TO BE SOUGHT BY CISD

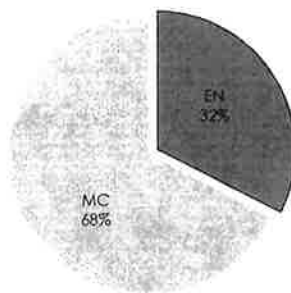
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Carroll Senior High School

ENERGY CONSUMPTION

- CONTROLS RETRO-COMMISSIONING
- **CENTRAL PLANT OPTIMIZATION**
- SITE AND EXTERIOR BUILDING LIGHTING LED RETROFIT
- AUTOMATIC VACANCY SENSOR LIGHTING CONTROLS
- DAYLIGHT HARVESTING CONTROLS
- INTERIOR LIGHTING FIXTURES LED RETROFIT



BUDGET TOTAL
\$6,098,872

MAINTENANCE/CAPITAL RENEWAL

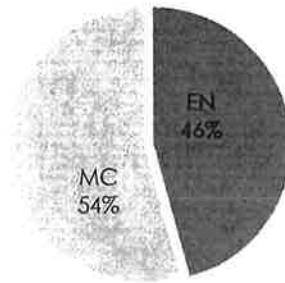
- ROOF TOP UNITS REPLACEMENT
- BOILERS AND DOMESTIC WATER HEATERS REPLACEMENT
- EXHAUST FANS REPLACEMENT
- PLUMBING FIXTURES REPLACEMENT
- **SITE LIGHTING AT EAST ATHLETICS LOT IMPROVEMENTS**
- **TENNIS COURT LIGHTING CONTROLS IMPROVEMENTS**
- EXTERIOR ACCENT LIGHTING FIXTURES LED RETROFIT
- **TVSS INSTALLATION AT MAIN ELECTRIC SERVICE EQUIPMENT**
- EMERGENCY EGRESS LIGHTING IMPROVEMENTS

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Carroll High School

ENERGY CONSUMPTION

- CONTROLS RETRO-COMMISSIONING
- **GEOTHERMAL HEAT PUMP RETROFIT OF 3-STORY CLASSROOM WING**
- HEATING WATER BOILERS REPLACEMENT
- SITE AND EXTERIOR BUILDING LIGHTING LED RETROFIT
- AUTOMATIC VACANCY SENSOR LIGHTING CONTROLS
- DAYLIGHT HARVESTING CONTROLS
- INTERIOR LIGHTING FIXTURES LED RETROFIT



BUDGET TOTAL
\$7,668,528

MAINTENANCE/CAPITAL RENEWAL

- ROOFTOP UNITS AND FAN COIL UNITS REPLACEMENT
- EXHAUST FANS REPLACEMENT
- PLUMBING FIXTURES REPLACEMENT
- **DISTRIBUTION TRANSFORMER REPLACEMENTS**
- EMERGENCY EGRESS LIGHTING IMPROVEMENTS

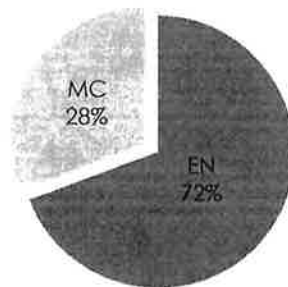
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Carroll Middle School

ENERGY CONSUMPTION

- CONTROLS RETRO-COMMISSIONING



BUDGET TOTAL
\$59,951

MAINTENANCE/CAPITAL RENEWAL

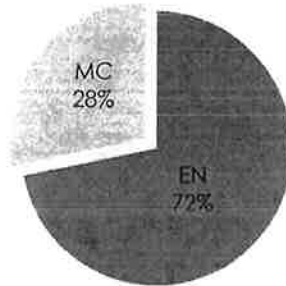
- INTERIOR AND EXTERIOR LIGHTING CONTROLS SYSTEM ADJUSTMENTS

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Dawson Middle School

ENERGY CONSUMPTION

- CONTROLS RETRO-COMMISSIONING
- **GEOTHERMAL RETROFIT RECOMMENDED FOR CLASSROOMS**
- SITE AND EXTERIOR BUILDING LIGHTING LED RETROFIT
- AUTOMATIC VACANCY SENSOR LIGHTING CONTROLS
- DAYLIGHT HARVESTING CONTROLS
- INTERIOR LIGHTING FIXTURES LED RETROFIT



BUDGET TOTAL
\$4,544,653

MAINTENANCE/CAPITAL RENEWAL

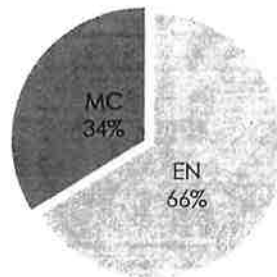
- ROOFTOP UNITS REPLACEMENT
- EXHAUST FANS REPLACEMENT
- PLUMBING FIXTURES REPLACEMENT
- EMERGENCY EGRESS LIGHTING IMPROVEMENTS

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Durham Intermediate School

ENERGY CONSUMPTION

- CONTROLS RETRO-COMMISSIONING
- **GEOTHERMAL RETROFIT RECOMMENDED FOR CLASSROOMS**
- SITE AND EXTERIOR BUILDING LIGHTING LED RETROFIT
- AUTOMATIC VACANCY SENSOR LIGHTING CONTROLS
- INTERIOR LIGHTING FIXTURES LED RETROFIT



BUDGET TOTAL
\$4,521,407

MAINTENANCE/CAPITAL RENEWAL

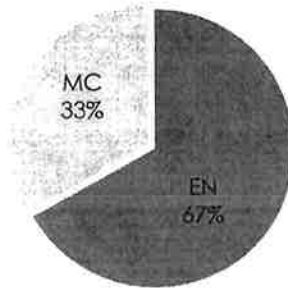
- ROOFTOP UNITS REPLACEMENT
- EXHAUST FANS REPLACEMENT
- PLUMBING FIXTURES REPLACEMENT
- **TVSS INSTALLATION AT MAIN ELECTRIC SERVICE EQUIPMENT**
- EMERGENCY EGRESS LIGHTING IMPROVEMENTS

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Eubanks Intermediate School

ENERGY CONSUMPTION

- CONTROLS RETRO-COMMISSIONING
- **GEOTHERMAL RETROFIT RECOMMENDED**
- SITE AND EXTERIOR BUILDING LIGHTING LED RETROFIT
- AUTOMATIC VACANCY SENSOR LIGHTING CONTROLS
- DAYLIGHT HARVESTING CONTROLS
- INTERIOR LIGHTING FIXTURES LED RETROFIT



BUDGET TOTAL
\$3,547,250

MAINTENANCE/CAPITAL RENEWAL

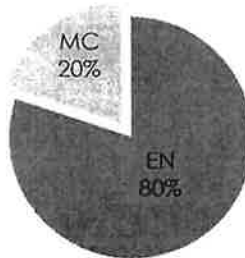
- ROOFTOP UNITS REPLACEMENT
- EXHAUST FANS REPLACEMENT
- PLUMBING FIXTURES REPLACEMENT
- EMERGENCY EGRESS LIGHTING IMPROVEMENTS

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Carroll Elementary School

ENERGY CONSUMPTION

- CONTROLS RETRO-COMMISSIONING
- **GEOTHERMAL RETROFIT RECOMMENDED**
- SITE AND EXTERIOR BUILDING LIGHTING LED RETROFIT
- AUTOMATIC VACANCY SENSOR LIGHTING CONTROLS
- DAYLIGHT HARVESTING CONTROLS
- INTERIOR LIGHTING FIXTURES LED RETROFIT



BUDGET TOTAL
\$2,448,184

MAINTENANCE/CAPITAL RENEWAL

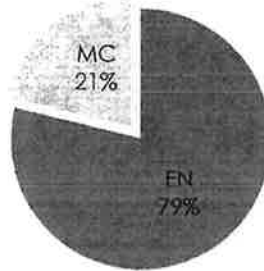
- ROOFTOP UNITS REPLACEMENT
- EXHAUST FANS REPLACEMENT
- PLUMBING FIXTURES REPLACEMENT
- EMERGENCY EGRESS LIGHTING IMPROVEMENTS

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Johnson Elementary School

ENERGY CONSUMPTION

- CONTROLS RETRO-COMMISSIONING
- **GEOTHERMAL RETROFIT RECOMMENDED**
- SITE AND EXTERIOR BUILDING LIGHTING LED RETROFIT
- AUTOMATIC VACANCY SENSOR LIGHTING CONTROLS
- DAYLIGHT HARVESTING CONTROLS
- INTERIOR LIGHTING FIXTURES LED RETROFIT



BUDGET TOTAL
\$2,311,983

MAINTENANCE/CAPITAL RENEWAL

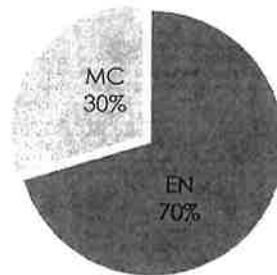
- ROOFTOP UNITS REPLACEMENT
- EXHAUST FANS REPLACEMENT
- PLUMBING FIXTURES REPLACEMENT
- **FEDERAL PACIFIC ELECTRIC PANELBOARDS REPLACEMENT**
- EMERGENCY EGRESS LIGHTING IMPROVEMENTS

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Old Union Elementary School

ENERGY CONSUMPTION

- CONTROLS RETRO-COMMISSIONING
- **GEOTHERMAL RETROFIT RECOMMENDED**
- SITE AND EXTERIOR BUILDING LIGHTING LED RETROFIT
- AUTOMATIC VACANCY SENSOR LIGHTING CONTROLS
- DAYLIGHT HARVESTING CONTROLS
- INTERIOR LIGHTING FIXTURES LED RETROFIT



BUDGET TOTAL
\$2,479,009

MAINTENANCE/CAPITAL RENEWAL

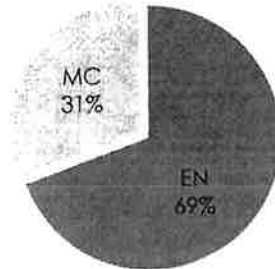
- ROOFTOP UNITS REPLACEMENT
- EXHAUST FANS REPLACEMENT
- PLUMBING FIXTURES REPLACEMENT
- **FEDERAL PACIFIC ELECTRIC PANELBOARDS REPLACEMENT**
- **TVSS INSTALLATION AT MAIN ELECTRIC SERVICE EQUIPMENT**
- EMERGENCY EGRESS LIGHTING IMPROVEMENTS
- FIRE ALARM SYSTEM REPLACEMENT

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Rockenbaugh Elementary School

ENERGY CONSUMPTION

- CONTROLS RETRO-COMMISSIONING
- **GEOTHERMAL RETROFIT RECOMMENDED**
- SITE AND EXTERIOR BUILDING LIGHTING LED RETROFIT
- AUTOMATIC VACANCY SENSOR LIGHTING CONTROLS
- DAYLIGHT HARVESTING CONTROLS
- INTERIOR LIGHTING FIXTURES LED RETROFIT



BUDGET TOTAL
\$2,944,299

MAINTENANCE/CAPITAL RENEWAL

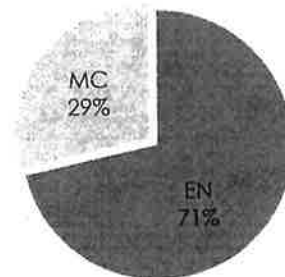
- ROOFTOP UNITS REPLACEMENT
- EXHAUST FANS REPLACEMENT
- PLUMBING FIXTURES REPLACEMENT
- EMERGENCY EGRESS LIGHTING IMPROVEMENTS
- FIRE ALARM SYSTEM REPLACEMENT

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Walnut Grove Elementary School

ENERGY CONSUMPTION

- CONTROLS RETRO-COMMISSIONING



BUDGET TOTAL
\$32,060

MAINTENANCE/CAPITAL RENEWAL

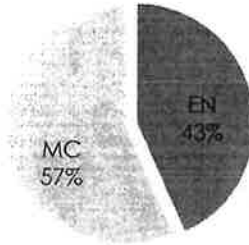
- INTERIOR AND EXTERIOR LIGHTING CONTROLS SYSTEM ADJUSTMENT

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Dragon Stadium

ENERGY CONSUMPTION

- CONTROLS RETRO-COMMISSIONING
- PARKING AREA, EXTERIOR BUILDING AND CONCOURSE LIGHTING LED RETROFIT



BUDGET TOTAL
\$539,970

MAINTENANCE/CAPITAL RENEWAL

- ROOFTOP UNITS REPLACEMENT
- SPLIT SYSTEMS REPLACEMENT
- PLUMBING FIXTURES REPLACEMENT
- EMERGENCY EGRESS LIGHTING IMPROVEMENTS
- FIRE ALARM SYSTEM REPLACEMENT

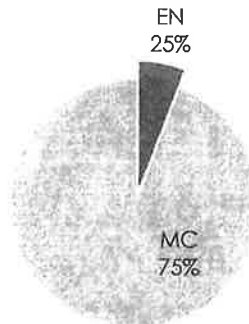
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Aquatics Center

ENERGY CONSUMPTION

- CONTROLS RETRO-COMMISSIONING
- EXTERIOR BUILDING LIGHTING LED RETROFIT
- AUTOMATIC VACANCY SENSOR LIGHTING CONTROLS
- INTERIOR LIGHTING FIXTURES LED RETROFIT



BUDGET TOTAL
\$2,633,983

MAINTENANCE/CAPITAL RENEWAL

- HVAC UNITS REPLACEMENT
- **POOL AREA DEHUMIDIFICATION UNITS REPLACEMENT**
- PLUMBING FIXTURES REPLACEMENT
- **ROOF AIR BUBBLE TO BE ADDRESSED**
- **SITE LIGHTING FOR AQUATICS CENTER PARKING AREA IMPROVEMENTS**
- EMERGENCY EGRESS LIGHTING IMPROVEMENTS
- FIRE ALARM SYSTEM REPLACEMENT

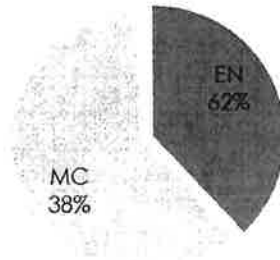
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Administration Center

ENERGY CONSUMPTION

- CONTROLS RETRO-COMMISSIONING
- SITE AND EXTERIOR BUILDING LIGHTING LED RETROFIT
- AUTOMATIC VACANCY SENSOR LIGHTING CONTROLS
- INTERIOR LIGHTING FIXTURES LED RETROFIT



BUDGET TOTAL
\$2,009,020

MAINTENANCE/CAPITAL RENEWAL

- ROOFTOP UNITS REPLACEMENT
- EXHAUST FANS REPLACEMENT
- PLUMBING FIXTURES REPLACEMENT
- **FEDERAL PACIFIC ELECTRIC PANELBOARDS REPLACEMENT**
- EMERGENCY EGRESS LIGHTING IMPROVEMENTS

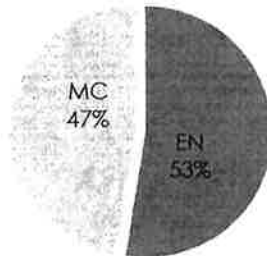
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Transportation

ENERGY CONSUMPTION

- CONTROLS RETRO-COMMISSIONING
- SITE AND FUELING STATION CANOPY LIGHTING LED RETROFIT
- AUTOMATIC VACANCY SENSOR LIGHTING CONTROLS
- INTERIOR LIGHTING FIXTURES LED RETROFIT FOR OFFICE AREAS, SHOP AND WASHBAY



BUDGET TOTAL
\$457,842

MAINTENANCE/CAPITAL RENEWAL

- PLUMBING FIXTURES REPLACEMENT
- EMERGENCY EGRESS LIGHTING IMPROVEMENTS
- FIRE ALARM SYSTEM REPLACEMENT

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Per Campus Totals

Carroll Senior High School	\$ 6,098,872
Carroll High School	\$ 7,668,528
Carroll Middle School	\$ 59,951
Dawson Middle School	\$ 4,544,653
Durham Intermediate School	\$ 4,521,407
Eubanks Intermediate School	\$ 3,547,250
Carroll Elementary School	\$ 2,448,184
Johnson Elementary School	\$ 2,311,983
Old Union Elementary School	\$ 2,479,009
Rockenbaugh Elementary School	\$ 2,944,299
Walnut Grove Elementary School	\$ 32,060
Dragon Stadium	\$ 539,970
Aquatics Center	\$ 2,633,983
Administration Center	\$ 2,009,020
Transportation	\$ 457,842

District Total \$42,297,011

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