# County Infrastructure Project Cost Control Measures

Department of Public Works and Environmental Services
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# DPWES Capital Facilities–

Mission:

- Provide Fairfax County with Quality, Cost Effective Buildings and Infrastructure in a Safe, Timely and Environmentally Sound Manner.

Range of County Building Projects–

- Fire Stations
- Police Stations
- Libraries
- Courts
- Adult and Juvenile Detention
- Parking Structures
- Vehicle Maintenance Facilities
- Human Services Facilities
- Community Centers
- Residential Treatment Facilities
- Public Safety Training
- Family and Homeless Shelters
- Animal Shelter

## Project Development Steps-

1) CIP Approval
2) Consultant Selection and Contract
3) Feasibility Study and Budget (TPE)
4) Project Funding Approval
5) Schematic Design
6) Design Development
7) Value Engineering
8) Construction Documents
9) Permits
10) Construction Bidding
11) Construction
12) Occupancy/ Warranty

# Initial Feasibility Study to Define Project Scope and Total Project Estimate (TPE)–

- County and Facility Space Standards
- Interviews and Coordination with Using Agency(s) for Operational Requirements
- Benchmarking of Space Program
- Verification of staffing levels and projections
- Design Consultants hired with Expertise in specific Facility Type
- Estimate for All TPE Cost Items
- Order of Magnitude TPE

# Fixed Construction Cost (FCC) in A-E Design Contract-

- A-E Contract Requirement to Design Project to Conform to Estimated Construction Cost
- Cost Reductions and A-E Redesign Required if Cost Estimates Exceed the FCC

# Independent Consultant Construction Cost Estimate Required at Each Design Phase–

- Verifies Conformance to Fixed Construction Cost at Each Stage of Design:
  - Schematic Design 15%
  - Design Development 35%
  - Construction Documents 50%
  - Construction Documents 100%

# Formal Value Engineering (VE) At 35% Design Phase-

- VE is a systematic approach to determine the lowest cost to provide the required function or service while providing the necessary quality.
- BOS Policy (1997) for formal VE on all Building Projects over $5 Million in Construction Value
- Multi-Discipline VE Review Team led by an independent Certified Value Specialist
- Target First Cost Reductions without Reduction in Product Value or Quality
- Life Cycle Analysis for Systems and Equipment (HVAC, Lighting etc.)

# Value Engineering cont'd

- Collaborative VE decision making process with DPWES, FMD, Using Agency and A-E
- 53 Studies with $43.5M in total accepted savings since1997.
- Additional cumulative savings through programmatic approach to VE ideas
- Diminishing opportunity for VE options on repetitive project types

# Energy Modeling–

- County Sustainable Development Policy (LEED) and BOS Environmental Agenda
- LEED Requirement for Energy Modeling and Energy Savings Calculation
- Provides Baseline for Life Cycle Analysis of Building Systems Alternatives
- Strive to achieve systems with the best life cycle cost
- County owns and operates for the building life

# Design Document Review and Quality Control-

- Staff is Trained in Value Engineering- Continuous VE Approach
- Staff is Trained in Multi Discipline Plan Reviews- Redi Check Standard
- Multi-Discipline Staff Team Review at Each Design Phase
- FMD, DIT and Using Agency Review at Each Design Phase
- Contract Requirements for A-E Quality Control Process
- Goal to Minimize Scope Changes and Design Errors/ Omissions (Low Bid Procurement)
- Option of Implementing Consultant Peer and Constructability Reviews

# Design Standards-

- Compliance with all Applicable Federal, State and Local Codes- Regulatory
- Guidelines for Architects and Engineers
- DPWES Design Standards for Fire Stations, Police Stations, Libraries, Parking Structures and District Supervisor Offices
- FMD's County Space Standards
- Lessons Learned Program and DPWES Quality Control Checklist

# Bidding and Construction Phase–

- Competitive Low Bid Procurement
- General Contractor Pre Qualification
- Quality Control Inspection Protocols by County Staff and by Consultants
- HVAC System Commissioning
- Thorough Review and Negotiation of all Change Orders for Entitlement and Cost
- Quality is Imperative for Long Term Cost Effectiveness

# Issues Impacting Cost–

- Quality– County ownership and operations for the long term
- Variable conditions in construction bid market
- Urbanization.  Tight, redevelopment sites
- Occupied, phased renovations
- Need for Temporary Facilities
- Land Acquisition costs
- Risk (Schedule, Cost, Quality)

# QUESTIONS?