SUDAS Implementation Toolbox

Tools you can use in your community to implement adoption of the SUDAS manuals.

What Do We Get with SUDAS?

Design Manual

- Guidance to consulting engineers working for the agency (city or county) or with developers concerning your public improvement requirements.
- Steps to take to develop a complete set of plans and specifications.
- Design standards that meet Iowa DNR's regulations for water mains and sanitary sewers.
- Up-to-date information that covers research results, materials, design concepts, requirements, and regulations as noted below:
    - Stormwater quantity calculations and mitigation techniques for increased runoff rates
    - Pavement thickness
    - Guidance on jointing of concrete pavements
    - Good subgrade and subbase
    - Meeting ADA requirements and other requirements for sidewalks and recreational trails
    - Trench design based on the type of pipe being used
    - Street lighting
    - Parking lot
    - Traffic signals
    - Trenchless construction

Standard Specifications Manual

- Contract requirements based on Iowa laws
- Up-to-date products for each type of construction that meet national standards
- Uniform installation requirements
- Consistent measurement and payment requirements
- Menu based specifications to fit the broadest range of project requirements
- Uniformity (specifications and figures) with Iowa DOT for water mains, sanitary sewers, storm sewers, and site work specifications
- Ability to maintain specific requirements you want to keep through supplemental specifications or special provisions

What Is the Value of Using SUDAS?

Value:

- Developed for Iowa urban areas around Iowa's laws.
- Uniformity of design and specifications across the state.
- Reduction of contractor confusion and mistakes due to standardization.
- Encourages more bidders.
- Method for statewide implementation of latest techniques and material use.
- Forum that allows state and local governments to collaborate with each other and industry.
- For larger agencies - allows better allocation of staff to projects - and not updating specs.
- Manuals are free online, free CDs, and only $40.00 each for printed versions.
- SUDAS staff will work with agencies to implement the SUDAS manuals in their community.

Cost Savings:

- Design:
    - Consultants and staff know what parameters to use for the project.
    - Consistency provides for faster designs as opposed to special requirements that vary from agency to agency.
    - Reduced design time could result in savings of 10 to 15% of consultant design cost.
- Construction
    - Contractors are familiar with the requirements; no surprises.
    - Less confusion about the work means faster construction and higher quality.
    - More bidders = lower prices.
    - Could mean savings of 5 to 10% of construction costs.

Typical SUDAS Standards

Streets:

- Subgrade compaction requirements
- Your choice of granular subbase or natural subgrade
- 26’ wide local street
- 31’ wide local/collector street
- Your choice of PCC or HMA pavements
- ADA compliant sidewalks

Sanitary Sewers:

- 8” minimum diameter sanitary sewer pipe
- Seven types of pipe products to choose from
- 48” minimum manhole diameter with 27” opening
- Standard manhole castings with chimney seal to prevent infiltration
- Uniform specifications with the Iowa DOT

Storm Sewers:

- 12” minimum diameter pipe
- Your choice of grate type or open throat intakes
- Your choice of cast-in-place or precast manholes and intakes
- Uniform specifications with the Iowa DOT

Water Mains:

- 8” minimum diameter pipe
- Three pipe products to choose from
- Your own fire hydrant type and color
- Uniform specifications with the Iowa DOT

Traffic Signals:

- Products that meet the Manual of Uniform Traffic Control Devices (MUTCD)
- Your choice of equipment for controllers, detectors, and other electronic equipment

Site Work:

- Your choice to seed or sod
- Your choice of seed type - urban, rural, wetland flowers, and grasses
- Your choice of plant materials - trees, shrubs, and ground cover
- Your choice of erosion control products/methods
- Choose from five types of retaining walls

How Do I Implement Adoption of the SUDAS Manuals?

Design Manual

The SUDAS Design Manual provides guidance to the engineer concerning the requirements for designing urban public improvements. This information will be used by staff engineers as they develop projects, consulting engineers that are hired to design projects, and engineers that are designing private development projects that will ultimately become the maintenance responsibility of the public agency.

The Design Manual establishes minimum requirements for various public improvement elements that meet the regulations directed at those facilities. This includes sanitary sewer, storm sewer, and water main pipe diameters, and fire hydrant spacing. In addition, ADA regulations require specific items to be included in sidewalk construction. Many of the design elements are not directly regulated, but standards exist that guide the design of the facility. This would include length of curves for a given speed on a street, the width of a driving lane, width of clear zones, and object setback distances, just to name a few.

Other design elements are standard design guidance, not specifically required by law, but are good engineering practices that have been applied uniformly across the state.

The impact of new design guidance is usually noted in each agency's subdivision or development regulations that may likely be a part of the zoning ordinance. The detail within these existing regulations is varied. Some agencies allow staff to set the requirements that each development must adhere to based on past practice; other agencies get very detailed in their written ordinance as they define utility requirements, street widths, and even street types.

When planning to adopt the SUDAS Design Manual, the first thing to do is assemble a working group of engineers, zoning administrators, developers, contractors, and agency administrators to determine if they see value in using a statewide standard for public improvement design guidance. If so, the following steps are needed:

- Identify your agency's current design requirements (if they are not detailed in your agency's regulations).
- Use the working group mentioned above to compare your requirements to the SUDAS Design Manual.
- Identify the differences.
- Evaluate the differences.
- Determine what items you want to retain from your old design requirements that differ from the SUDAS Design Manual.
- Use this list of items to develop supplemental design standards that will modify the SUDAS Design Manual.
- Pass a resolution designating the SUDAS Design Manual and your supplemental requirements as your agency's standards for designing public improvements that will become your agency's maintenance responsibility.

Standard Specifications Manual

The SUDAS Standard Specifications provide directions to the contractor concerning the requirements for constructing urban public improvements. The Specifications include standard methods of measurement and basis of payment for each construction item, as well as product and execution information.

When planning to adopt the SUDAS Standard Specifications, the first thing to do is bring together staff, other agency engineers, contractors, consulting engineers, administrators, city/county attorneys, City Council/Supervisors, and any other interested parties to discuss the benefits and values to be gained by using SUDAS.

Start by determining which approach to take:

1. Easiest Approach:
    a. Pass a resolution adopting the current versions of the SUDAS Standard Specifications as your standards for construction of public improvements.
    b. As projects are designed, evaluate the differences from the SUDAS requirements and your agency's previous requirements for that type of project. Write special provisions for those items you want to retain from your old requirements that differ from the SUDAS Standard Specifications.
    c. After doing this for several projects of differing types, accumulate the items from the special provisions into a set of supplemental specifications. These supplemental specifications will modify the SUDAS Standard Specifications to create your agency's standard specifications.
    d. Pass a new resolution adopting your supplemental specifications in addition to the SUDAS Standard Specifications.

2. Most Direct Approach:
    a. Assemble a team of designers and construction inspectors to compare your agency's current specifications with the corresponding SUDAS Standard Specifications.
    b. Identify the differences.
    c. Evaluate the differences.
    d. Determine what items you want to retain from your old specifications that differ from the SUDAS Standard Specifications.
    e. Use this list of items to develop supplemental specifications that will modify the SUDAS Standard Specifications.
    f. Pass a resolution adopting the SUDAS Standard Specifications and your supplemental specifications as the approved specifications for your agency

Key Issue

It is important not to change too many elements of the SUDAS manuals just to get back to your old requirements. Focus only on the few items that involve very specific benefits to your agency. Trust the 300 or so Professional Engineers in the state that review and approve revisions to the SUDAS manuals.