



- System Model Integrated With City GIS
  - Model Selected With City Input
  - Commercially Available
  - Commercially Supported
  - Integrated with GIS
- Owned by City
- City Staff Trained in Model Use



- Population Projections
  - Based on Best Available Data
    - UGB, Horizon 2020, T2030
    - Tempered with Local Engineering Experience
    - Realistic Projections

Adaptive Through GIS & Hydraulic Model



## Planning Tools Create a Living Master Plan

- Flow Projections
  - Utilize Extensive Flow Monitoring Network
  - Reflective of Recent Improvements
  - Adaptive Through GIS & Hydraulic Model



- Tools are Adaptive and Easy to Use
- Allow City to Evaluate Changes in "Real Time"
- Allows Current and Accurate System Analysis
  - Identification of CIP Needs
  - Identification CIP Timing
  - Tied to Cost and Rates
  - Includes Analysis of second WWTP



## Planning Tools Focus on Existing System

- Tools Incorporate Existing System Records
  - Sub-basins and Priorities for Infiltration & Inflow Reduction
  - Completed Pipeline and Manhole Rehab Projects
  - Material, Age, O&M History and Remaining Life
- Tools also Available for Detailed Rehabilitation Program
  - Field Surveys
  - CCTV
  - Failure Criticality and Prioritization
- CIP Addresses Existing System Needs
  - Bottleneck Areas and Capacity Improvements
  - Prioritization of Continuing I/I Reduction Program
  - Future I/I Reductions
  - Remaining Life & Value



## Wastewater Facilities Master Plan Products & Deliverables

- Project Control Plan
- Software Selection
- Draft and Final Wastewater Master Plan
- Model Delivery & Training

- Technical Memoranda
  - #1 Planning Scenarios
  - #2 Flow & Rain Data
  - #3 Existing Data
  - #4 Ph. 1 Model (Wakarusa)
  - #5 Wakarusa WRF Eval.
  - #6 Calibrated Model
  - > #7 Design Storm Scenarios
  - #8 Capital Improvements Program
  - #9 Financial/Rate Impacts
  - #10 I/I Prioritization



## Wastewater Facilities Master Plan Project Needs & Benefits

- Updated Wastewater Planning Tools
  - Jointly selected current commercial modeling software
  - Installed on Lawrence network with staff training
  - Tied to City's latest sewer map GIS data
  - Matching latest planning (UGB, Horizon 2020, T2030)
    - Reflect growth scenarios
  - Using City's long term flow data (30 meters from 10/06)
    - Flows will reflect current development and I/I responses
    - Flows will show impact of recent system rehabilitation projects
  - Future changes can be evaluated more easily
- Timing, sizing, location of 2<sup>nd</sup> WWTP
- Updated Wastewater CIP Projects with Costs & Priorities