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Strategies to Phase Infrastructure Expansion

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Strategies to Phase Infrastructure Expansion: Balancing Cost and Growth

Mitch Holtz, P.E., Strand Associates, Inc.[®]



Introduction to the Concept of Phasing

- Phasing allows a balance between infrastructure costs and infrastructure needs
 - Capital improvements (roads, utilities, public buildings, essential services) require significant financial investments
 - Mismanagement of financial demands for capital improvements can be burdensome to current ratepayers and taxpayers
- Planning for scalable improvements, project prioritization, and phasing will allow cities to mitigate financial challenges to create effective and sustainable Capital Improvement Plans (CIPs)



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Strategic Phasing of Infrastructure Expansion

- Segmentation:
 - ▣ Manageable
 - ▣ Sequential
 - ▣ Aligns with current financial capabilities
 - ▣ Aligns with future growth projections
 - ▣ Allows for gradual expansion of infrastructure in response to projected demands.
 - ▣ Result:
 - Minimize short-term financial strain on current ratepayers and taxpayers
- Planning for scalable improvements, project prioritization, and phasing will allow Cities to mitigate financial challenges to create effective and sustainable Capital Improvement Plans (CIPs)

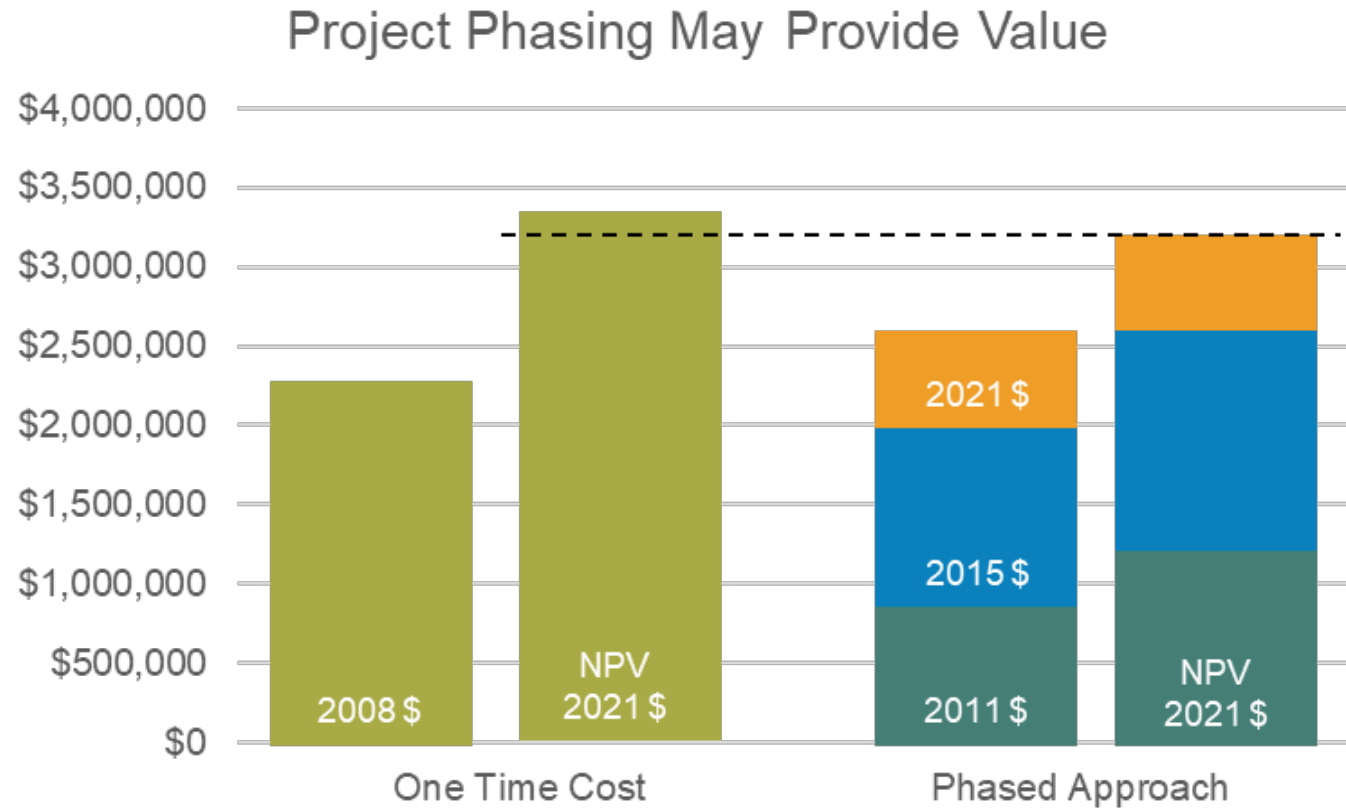
Strategic Phasing of Infrastructure Expansion, Continued

- Key strategies:
 - ▣ Assess needs and establish priorities
 - Assess City’s current needs and future growth projections
 - ▣ Implement incrementally
 - Divide large projects into smaller (manageable) phases
 - ▣ Design in flexibility
 - Incorporate flexibility into design
- Project example: North Grimes Sports Complex, Grimes, IA

Project Example: North Grimes Sports Complex – Grimes, IA

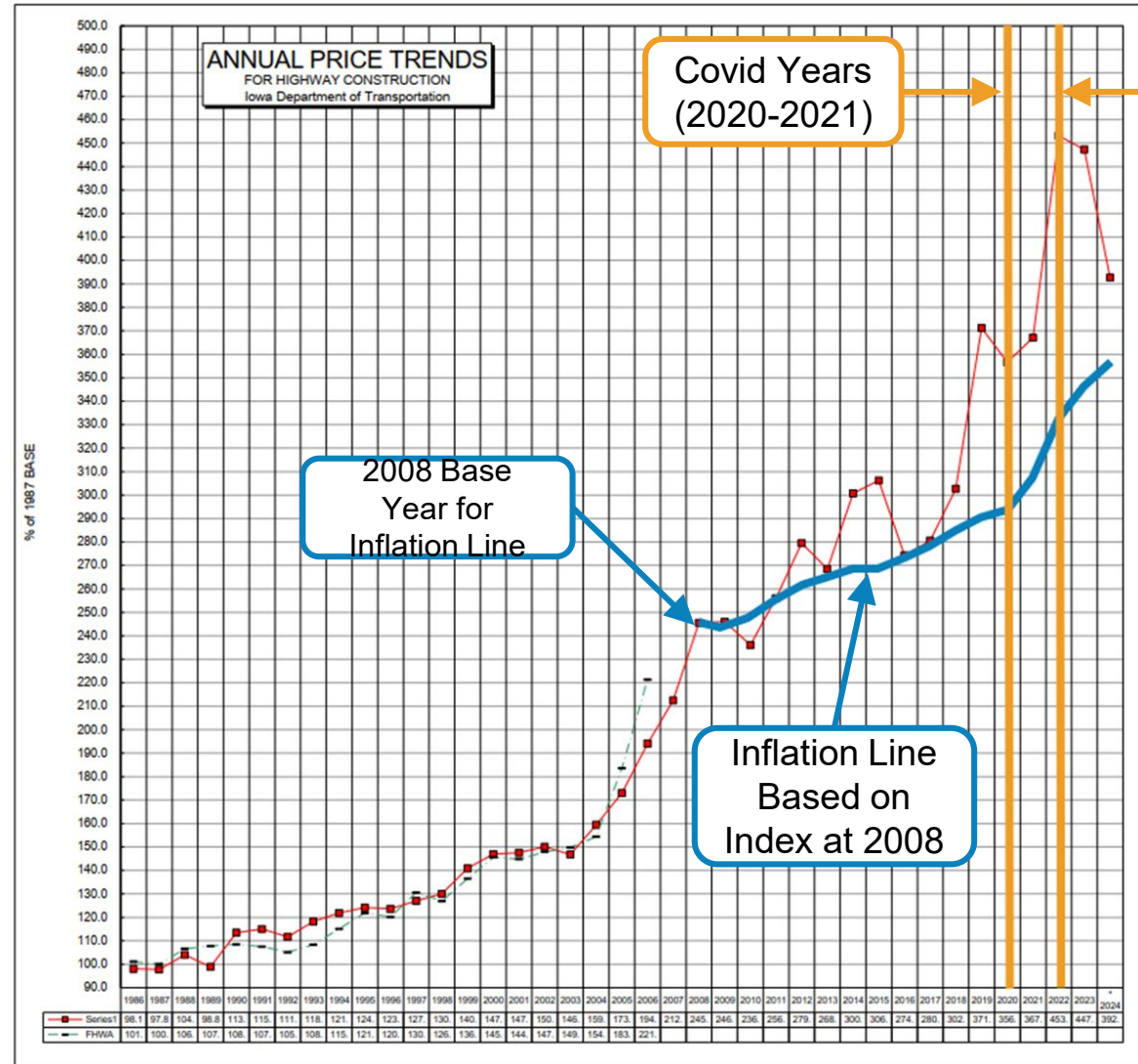


Project Example: North Grimes Sports Complex – Grimes, IA



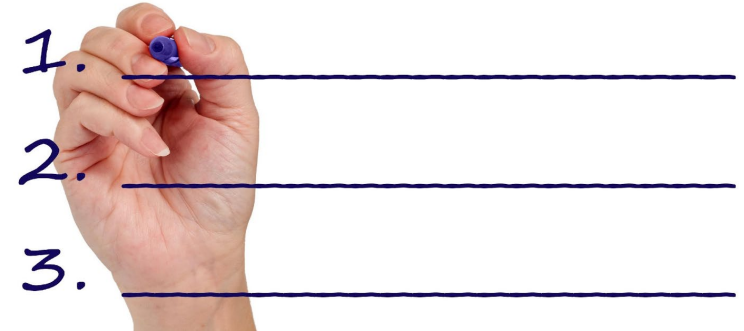
Note: Net Present Value (NPV) based on ENR Construction Cost Index History [August 2024]

Project Example: North Grimes Sports Complex – Grimes, IA



Project Prioritization to Reduce Burden

- Prioritization is essential
 - ▣ Assess risk
 - ▣ Allocating limited resources
 - ▣ Maximize benefit
 - ▣ Result:
 - Projects that provide greatest benefit to community



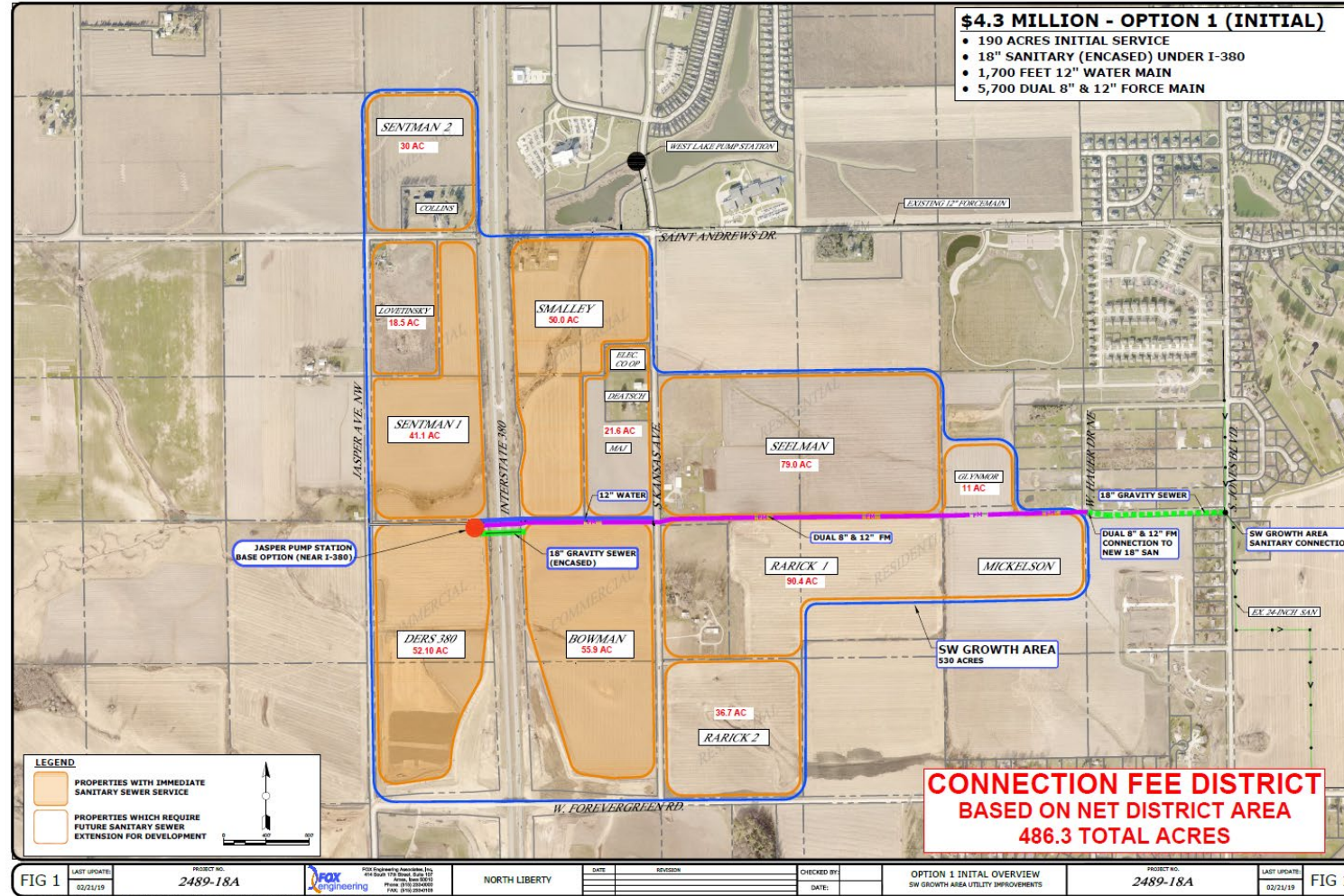
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Project Prioritization to Reduce Burden, Continued

- Key strategies:
 - ▣ Cost-benefit analysis
 - Evaluate economic, social, and environmental impacts of projects
 - Look for highest ROI
 - ▣ Community engagement
 - Help understand community needs and preferences
 - Aligns project with priorities to gain support for rate and/or tax increases
 - ▣ Leverage partnerships and funding opportunities
 - Explore partnerships with private, governmental, and non
- Project example: SW Growth Area Utility Improvements, North Liberty, IA

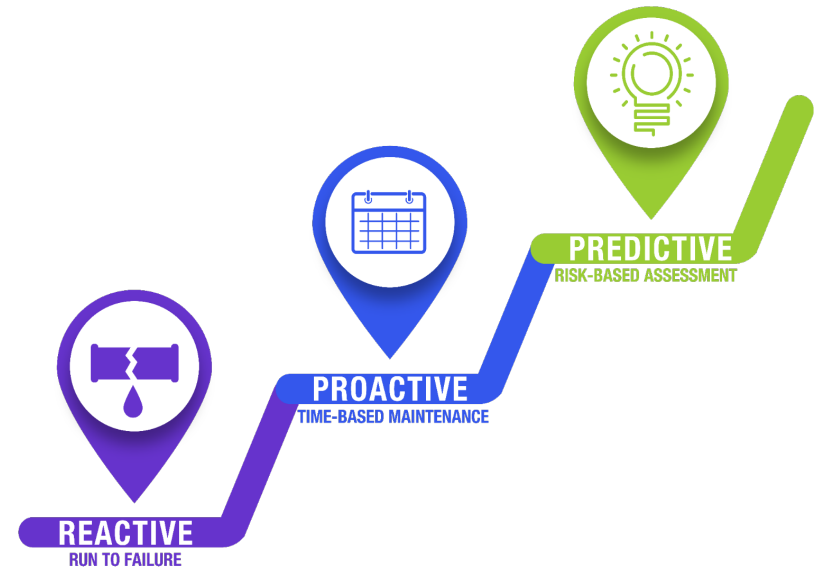


Project Example: SW Growth Area Utility Improvements, North Liberty, IA



Planning Improvements for Easy Expansion

- Importance of planning:
 - ▣ Forecast need
 - ▣ Design with the future in mind
 - ▣ Minimize future costs
 - Redesign
 - Expansion
 - ▣ Result:
 - Smoother and more cost-effective scalability
 - Minimize short-term financial strain on current ratepayers and taxpayers



Planning Improvements for Easy Expansion, Continued

- Key strategies:
 - ▣ Modular design principles
 - Modular design principles allow for easy addition of components or more capacity
 - ▣ Right-of-way and land acquisition
 - Secure the needed land in advance based on future expansion
 - ▣ Integration with existing infrastructure
 - Design new projects to be seamless with existing infrastructure
- Project example: South James Street, Grimes, IA

Project Example: South James Street – Grimes, IA



Before

Project Example: South James Street – Grimes, IA



Proposed

Project Example: South James Street – Grimes, IA



Finished Product

Increase Utility Rates Over Time

- Match revenues to increasing construction costs
 - ▣ Plan for increasing construction costs
 - Inflation
 - Material/labor shortages
 - Regulations
 - Other economic pressures
 - ▣ Plan for increasing operation/maintenance costs
 - ▣ Use capital improvement plans to throttle infrastructure costs
 - ▣ Adjust utility rates over time to increase revenues
 - ▣ Result:
 - Tax levies stay steady



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Increase Utility Rates Over Time, Continued

- Key strategies:
 - ▣ Retain and utilize a municipal financial advisor
 - Routinely evaluate city revenues and upcoming known project costs
 - Factor in emergency expenditures
 - ▣ Set political expectations
 - Waiting to adjust and then adjusting all at once is hard, politically
 - Adjusting over time allows people to adjust and subsequently accept the adjustments

Conclusion

- Phasing is possible for many projects
- Planning is imperative to understand the scope of the project
- Using cost-benefit analysis, cities can provide phased projects that provide high ROI for all phases
- Use professionals that understand costs and revenues to help be responsible with taxpayer money



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