



Innovative Regulatory Approaches to Stormwater and Flood Plain Management vs. Land Use Regulations

Engineering Resource Associates, Inc.
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ENGINEERING RESOURCE ASSOCIATES, INC.
Consulting Engineers, Scientists & Surveyors

About ERA

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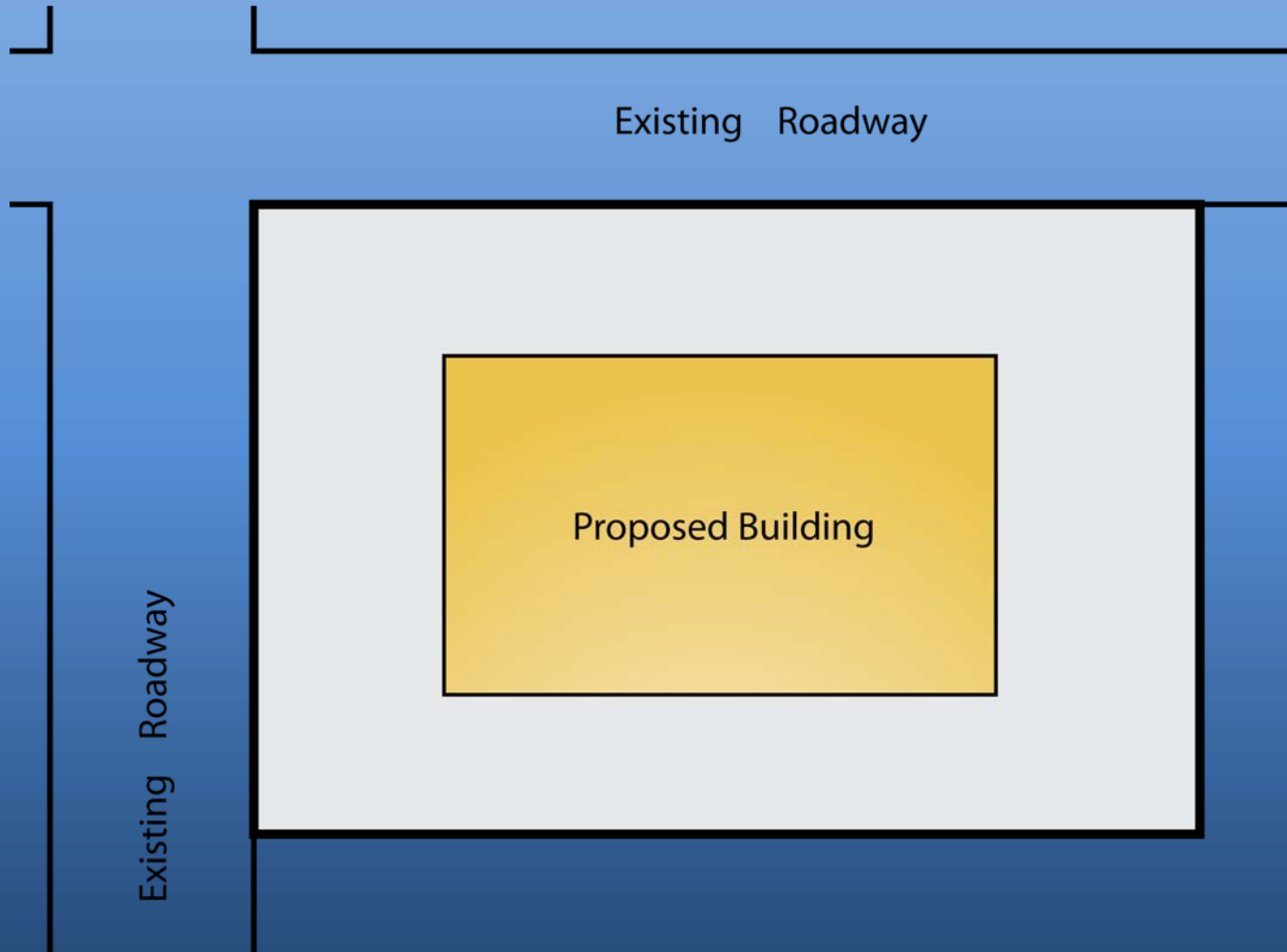
Introduction – Regulatory Environment

- Expanding Regulations
- New “quasi” regulations
- Areas of Overlap
 - Practice/Profession
 - Code

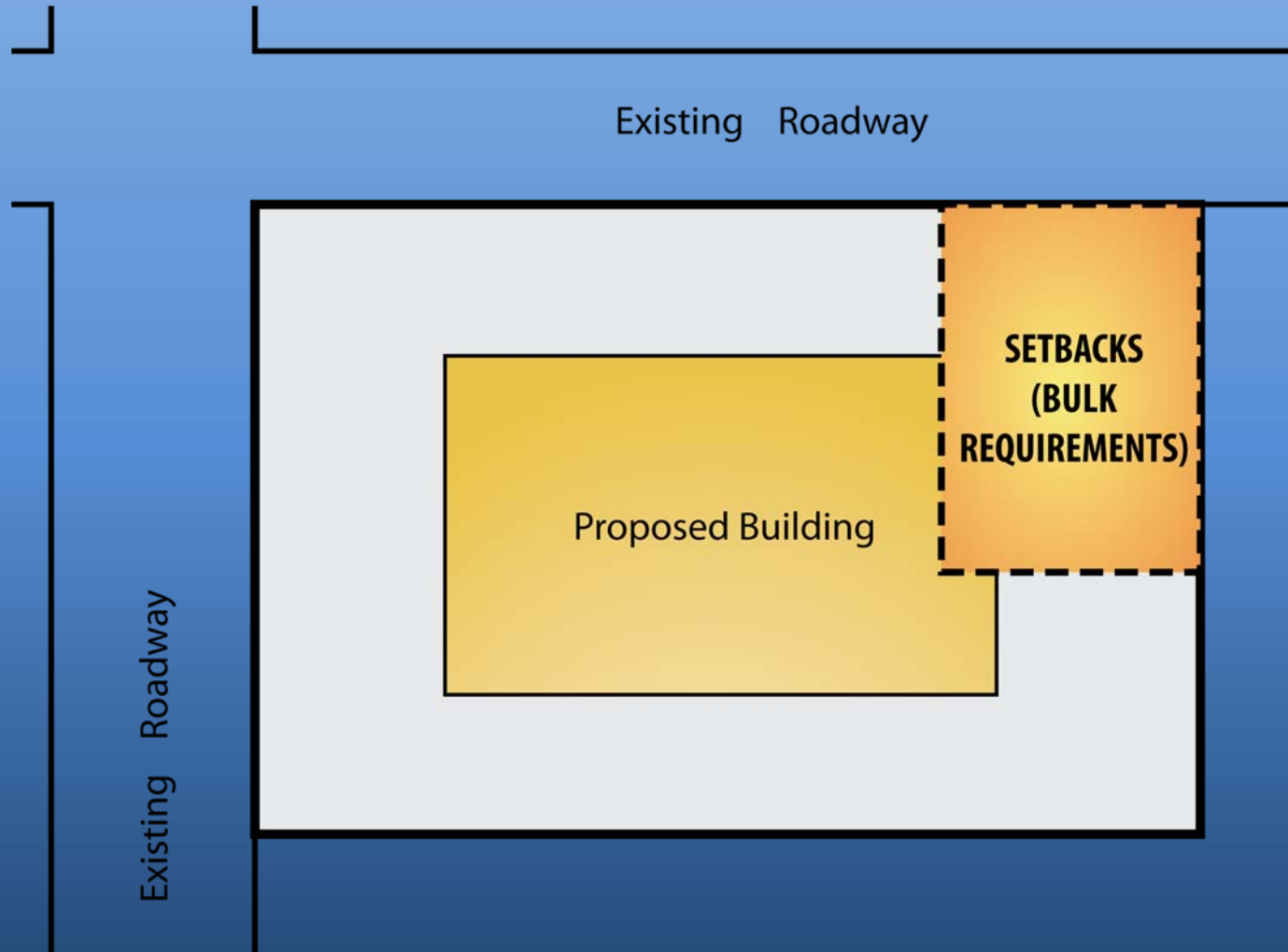
Increasing Conflict between competing interests

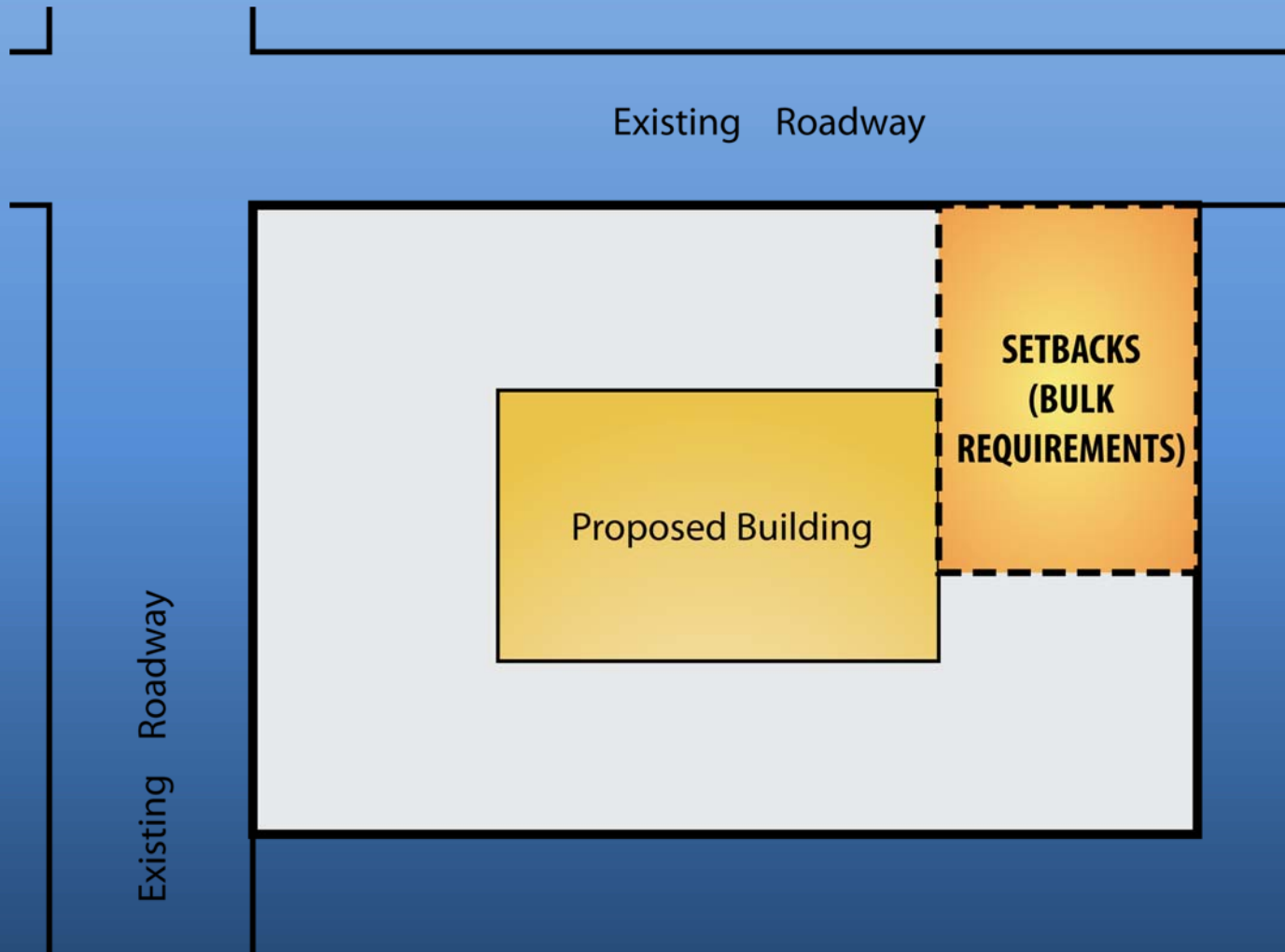


Initial Development

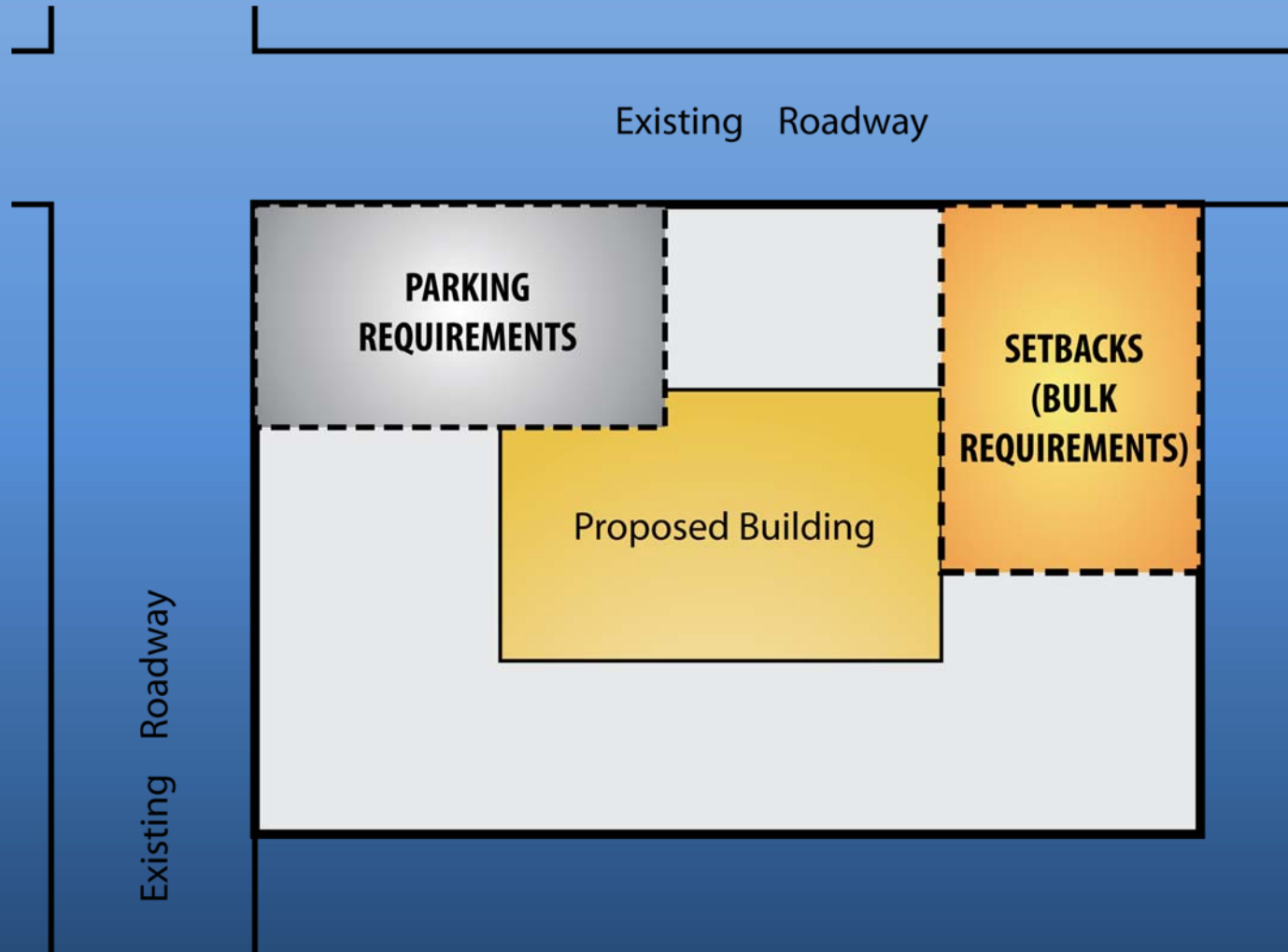


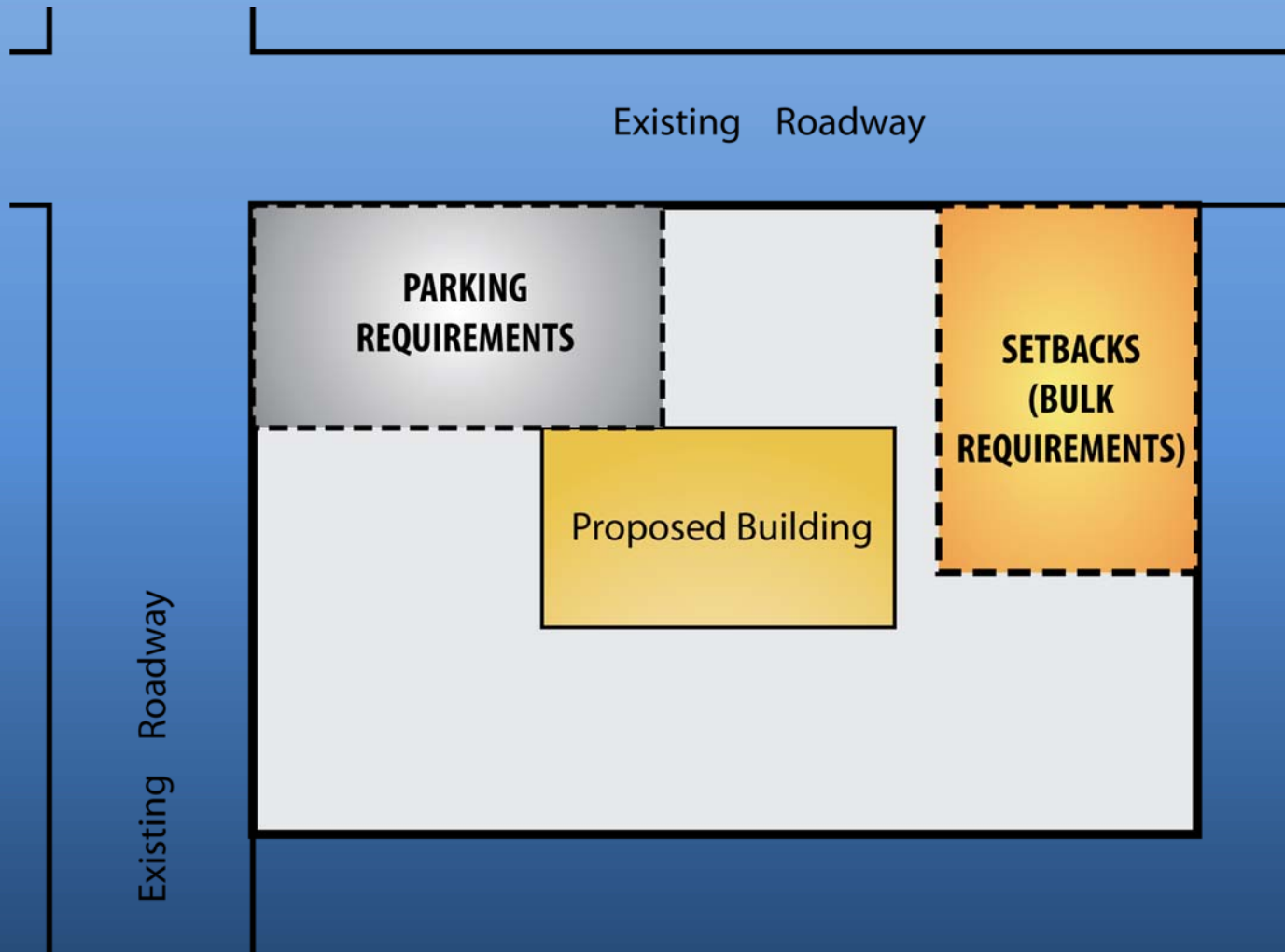
Bulk Requirements



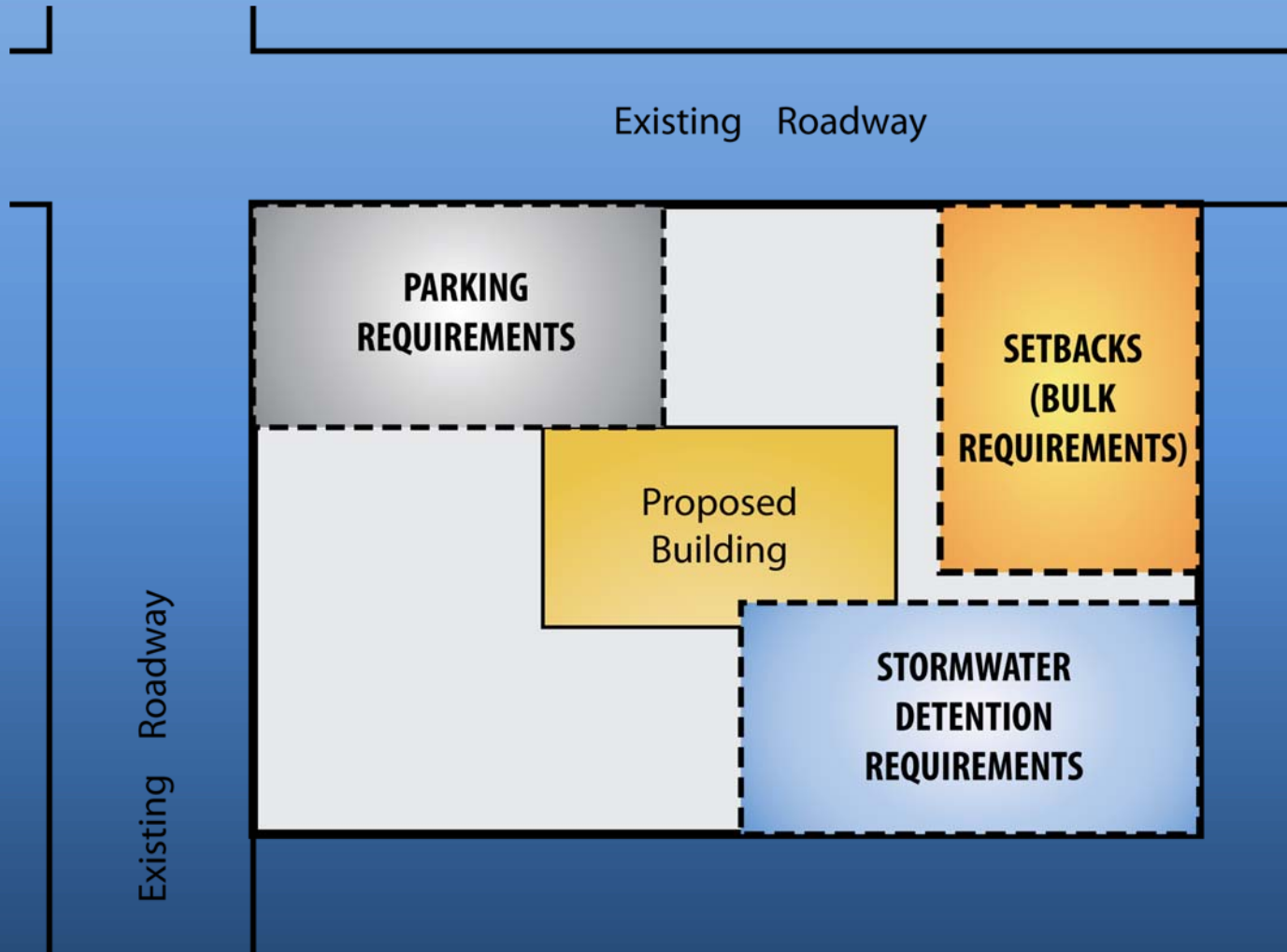


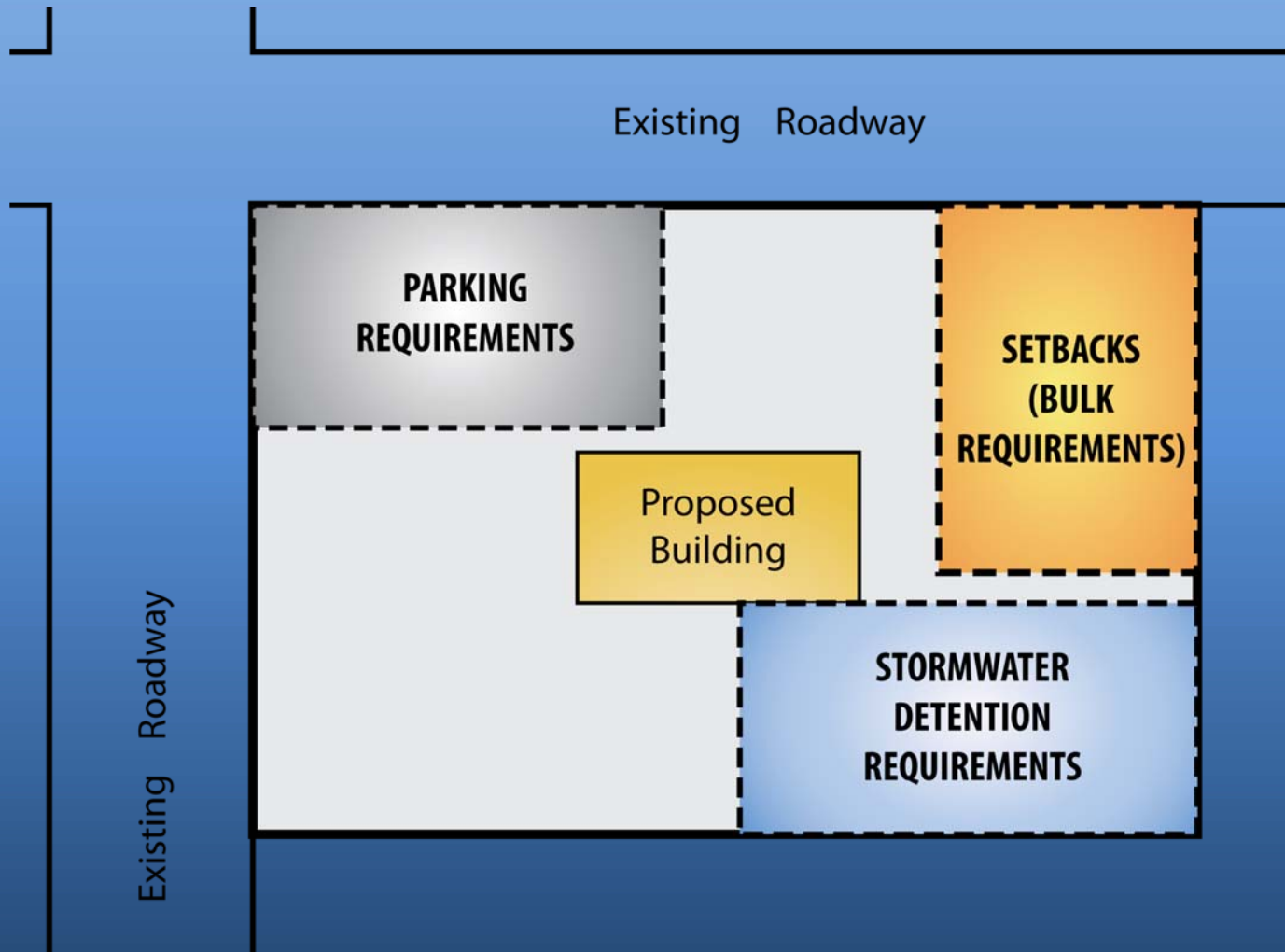
Parking Requirements



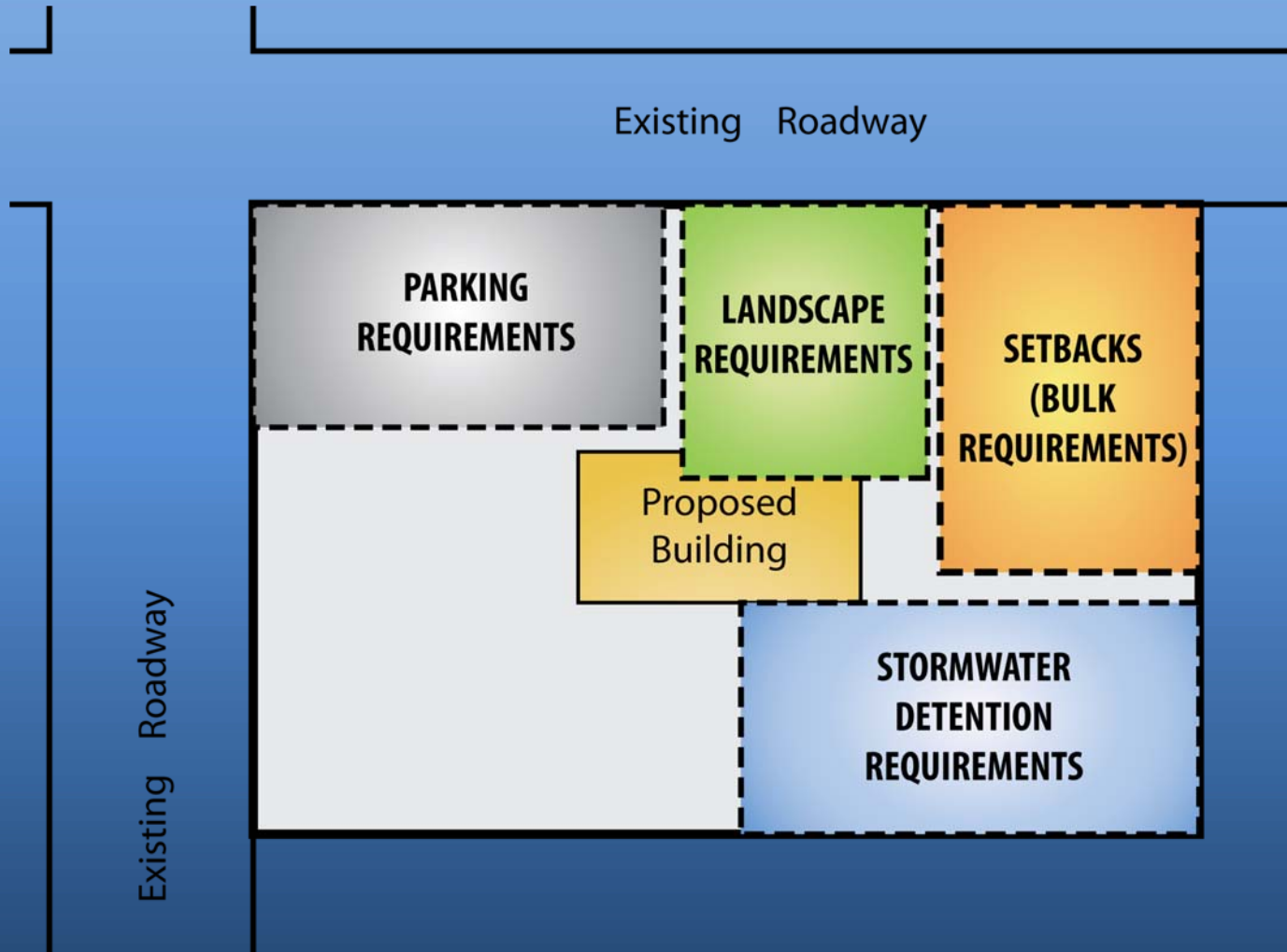


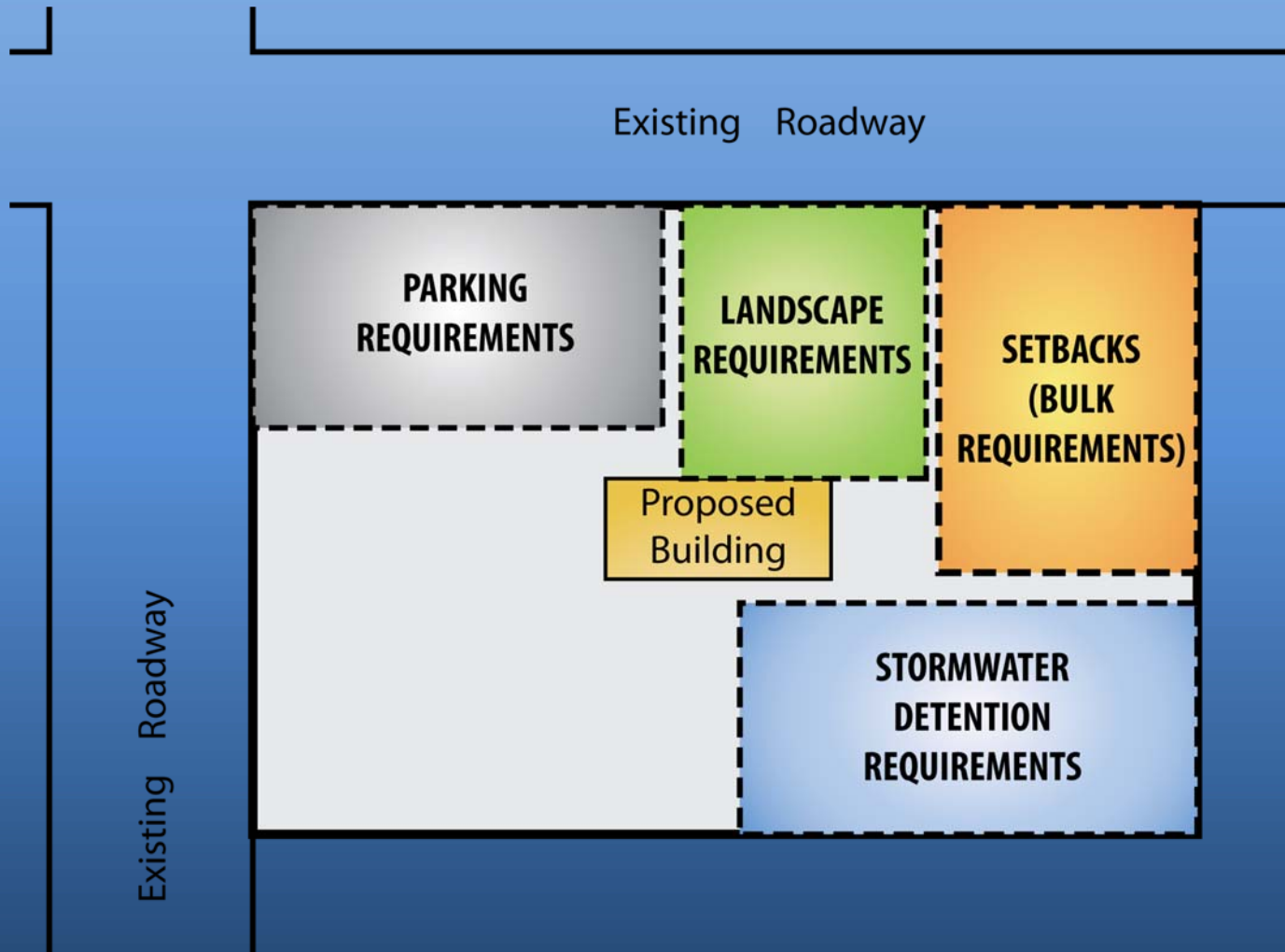
Stormwater Requirement



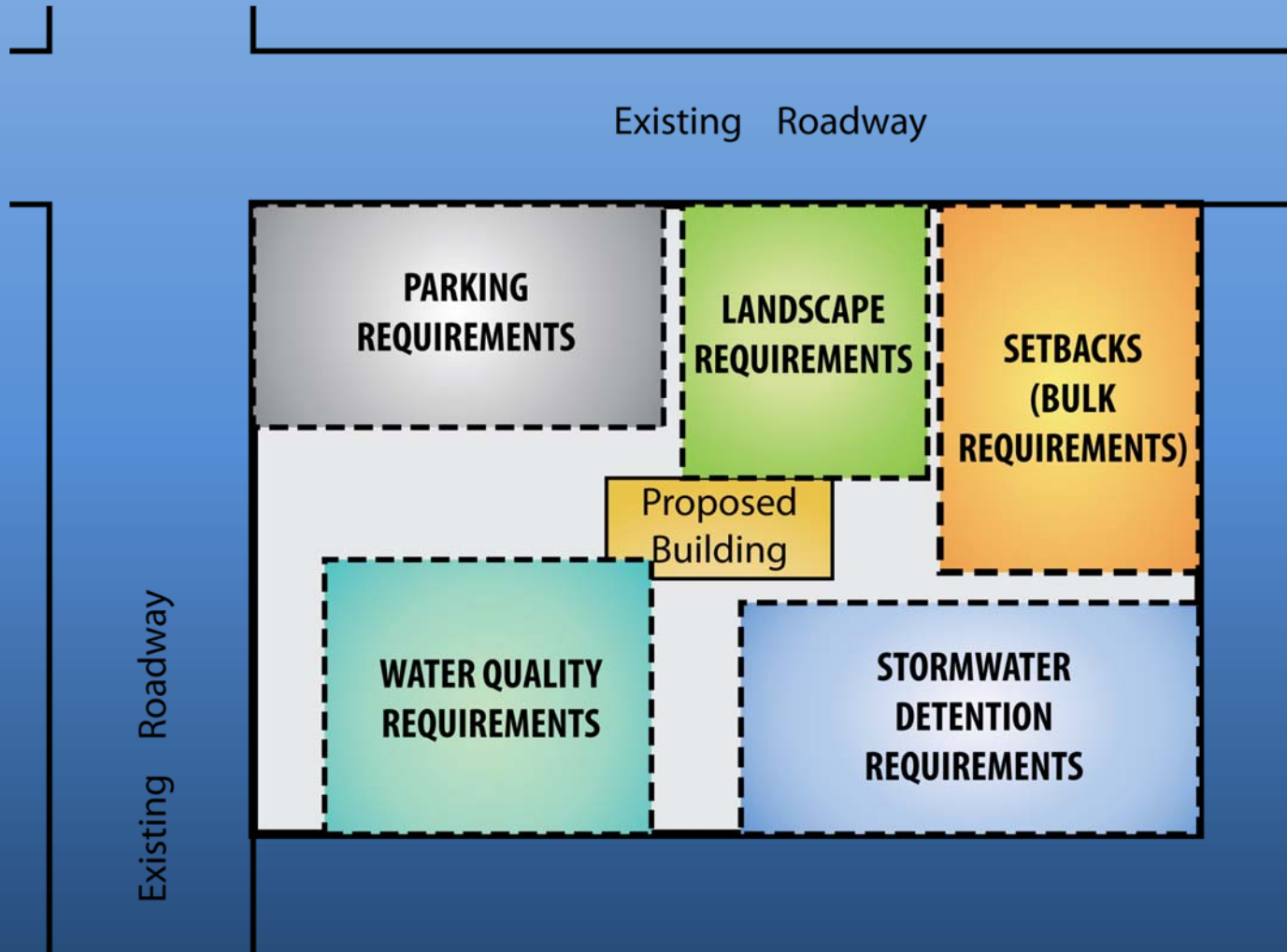


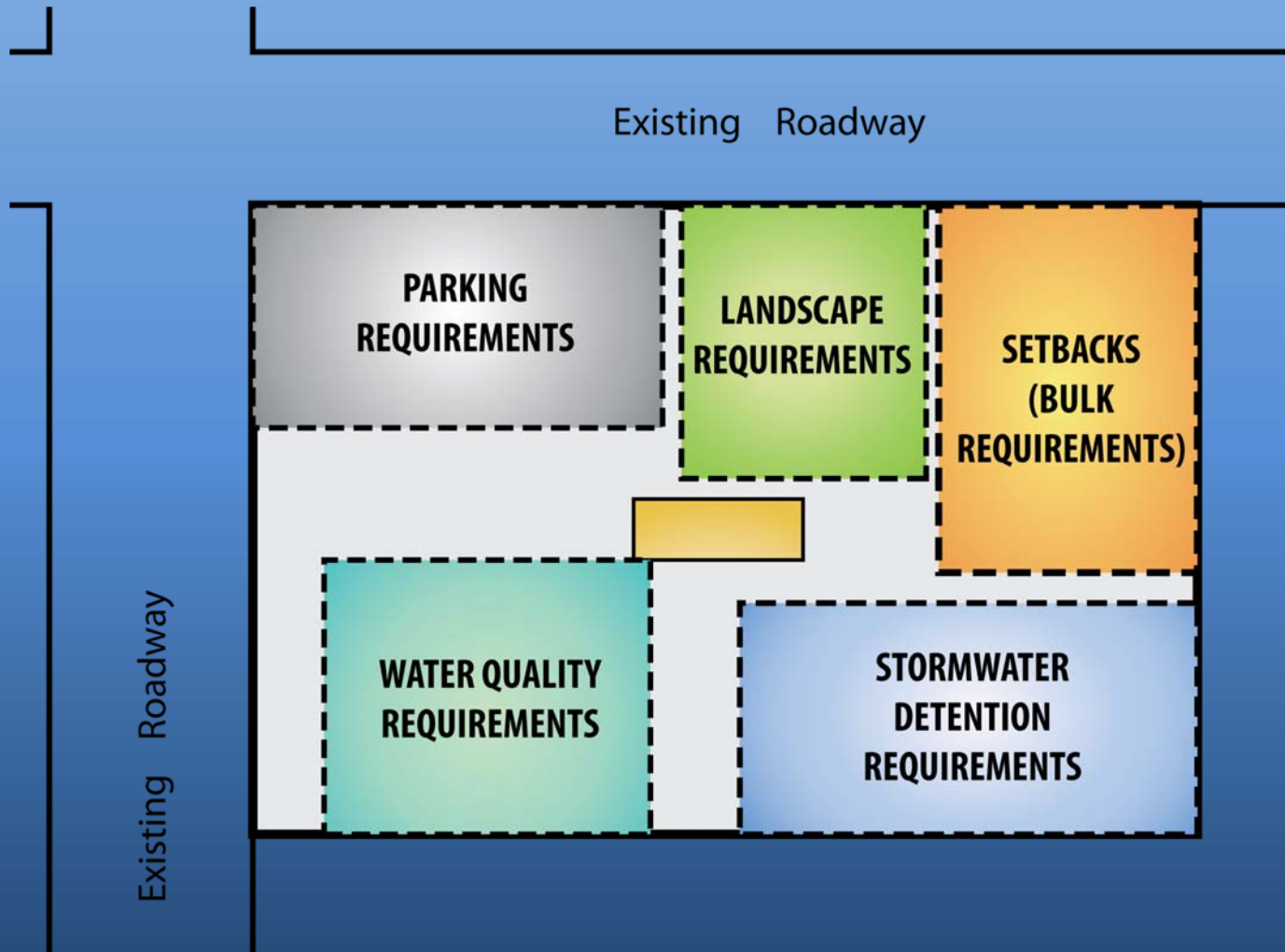
Landscape Requiriements

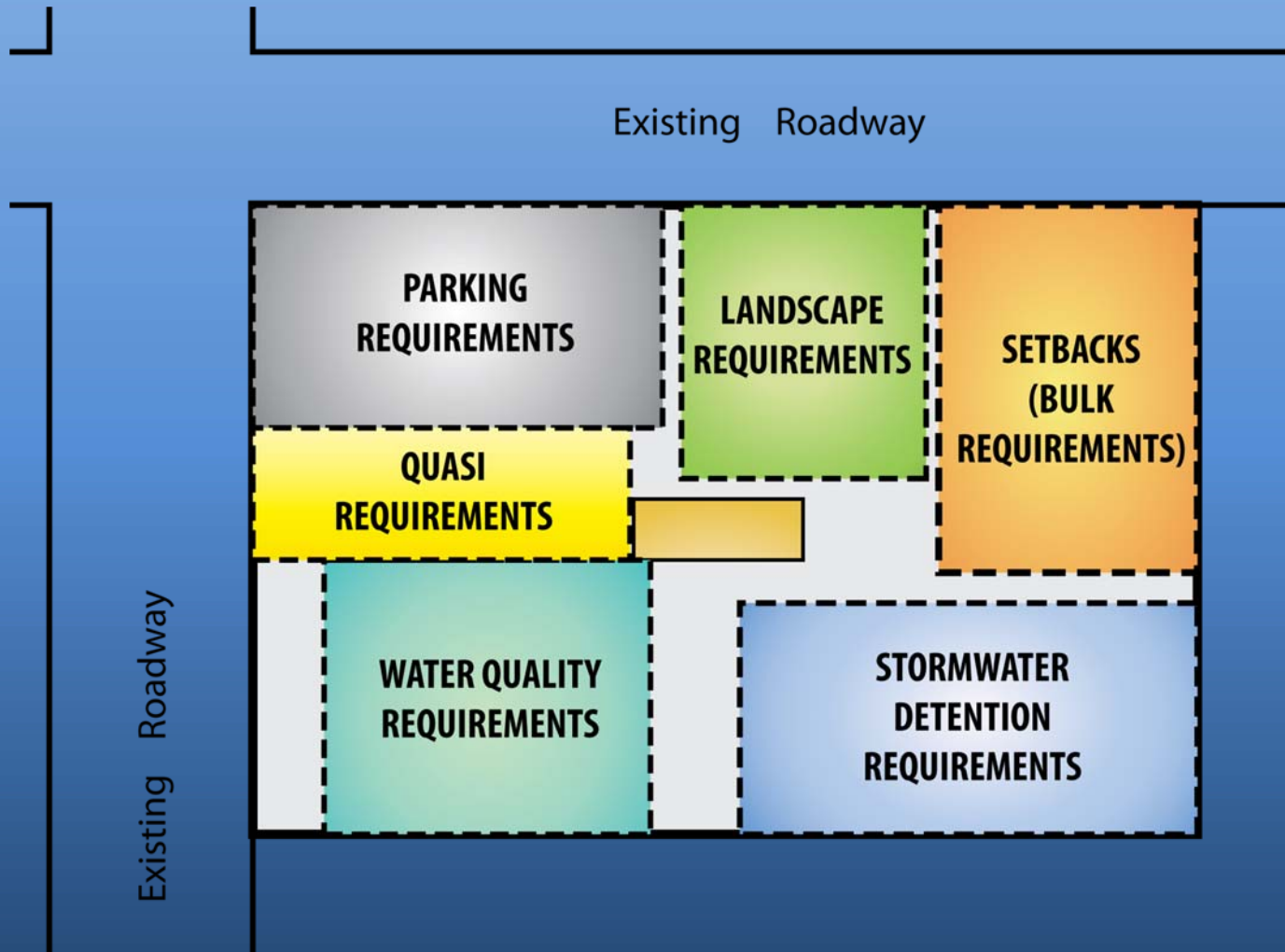


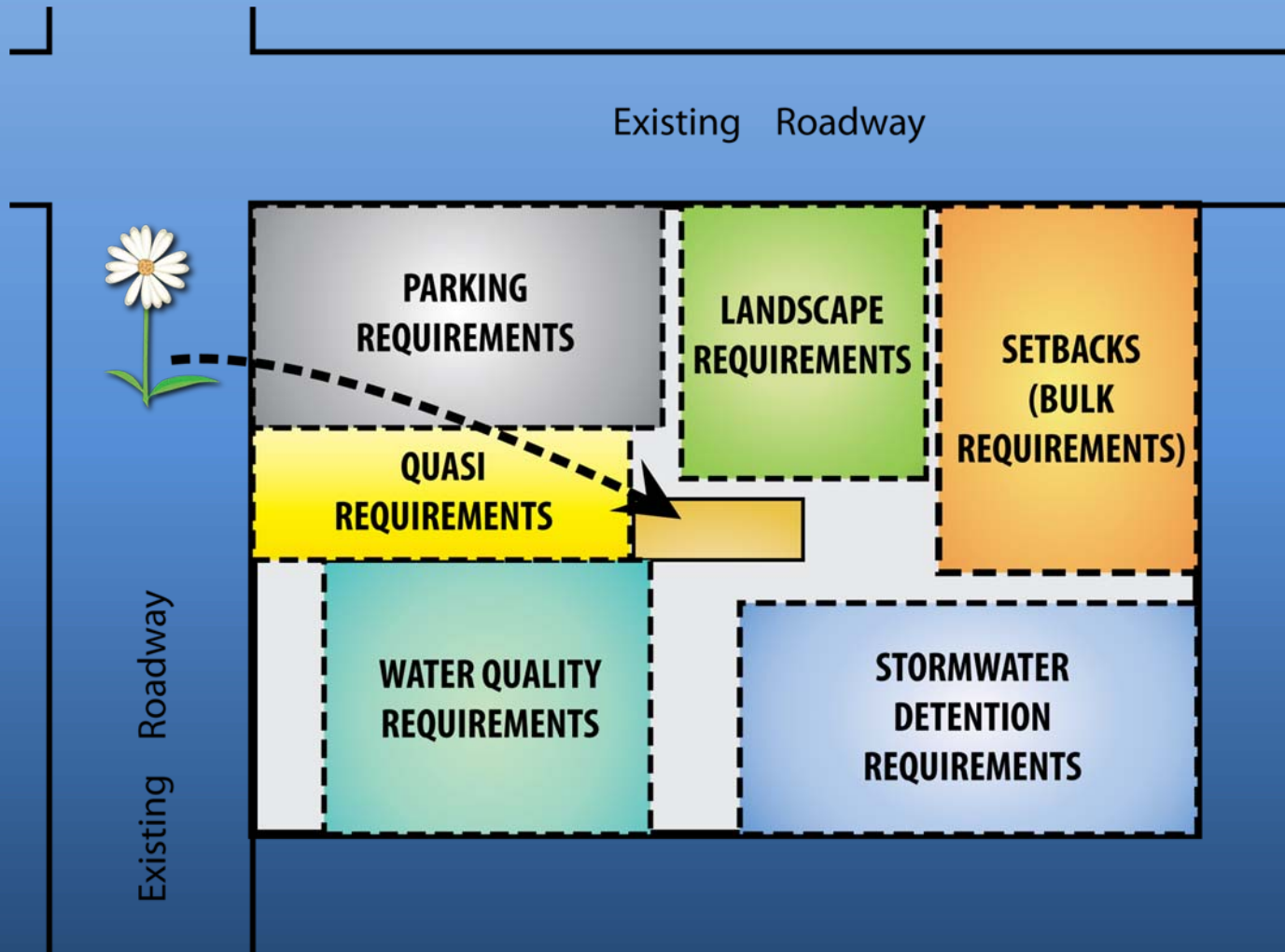


Water Quality Requirements

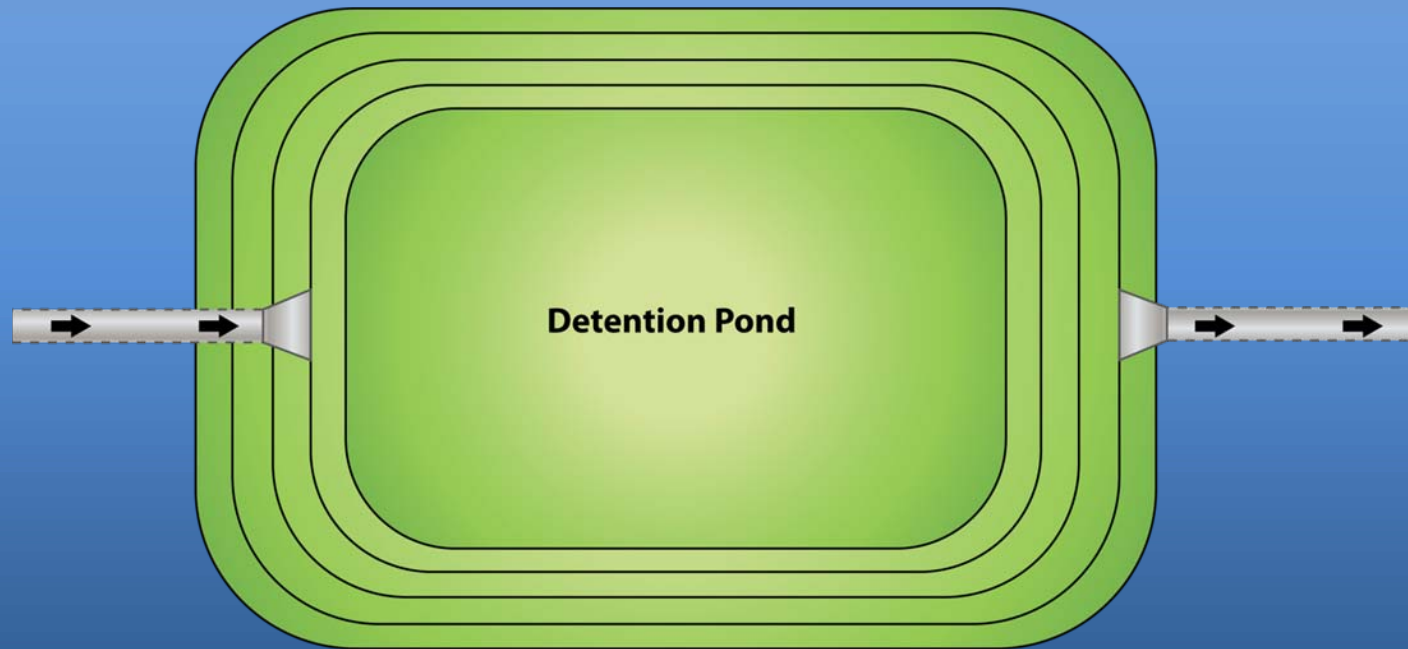




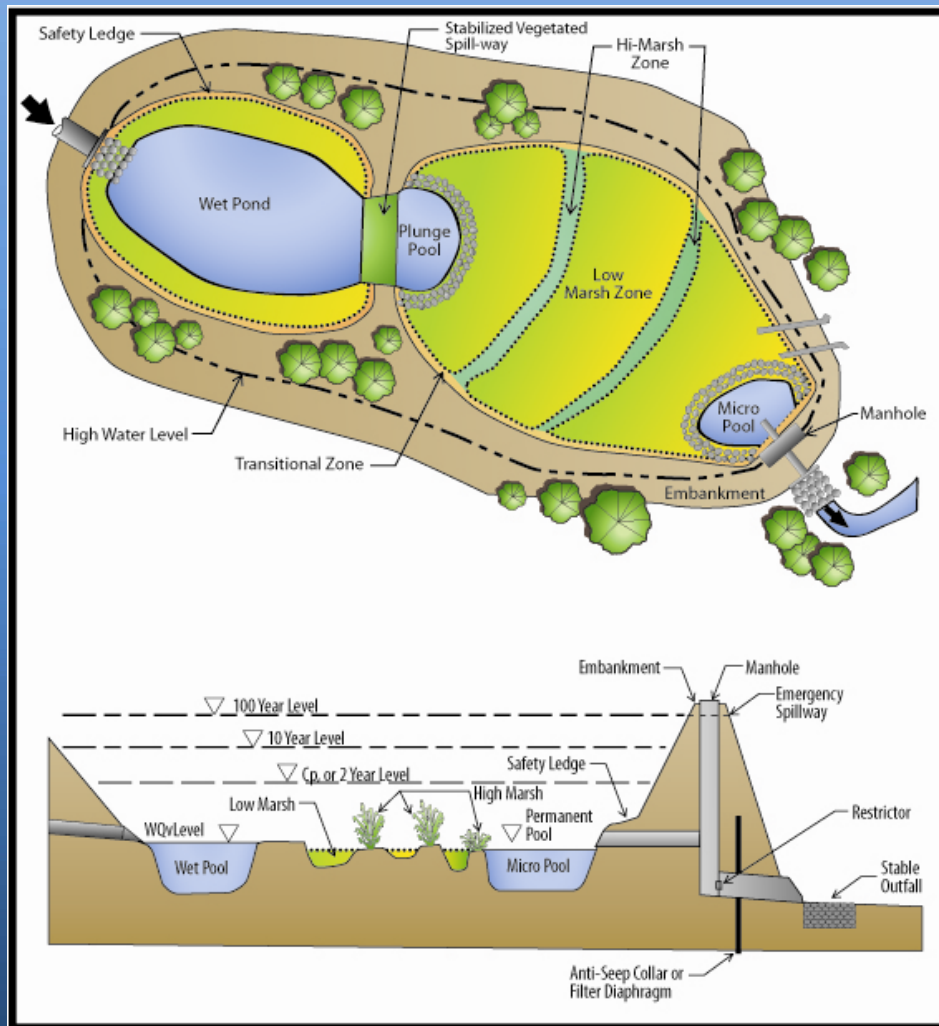




Old School Detention Pond



Current “Detention Pond”



Solutions?

- UDO- Unified Development Ordinance
 - Not lumping everything into one document
 - Credit like requirements
 - Eliminate conflicts.
 - Requires a lot of cooperation between professions
 - Well written, interactive technical guidance (especially with the “quasi” regs)



Volume Control

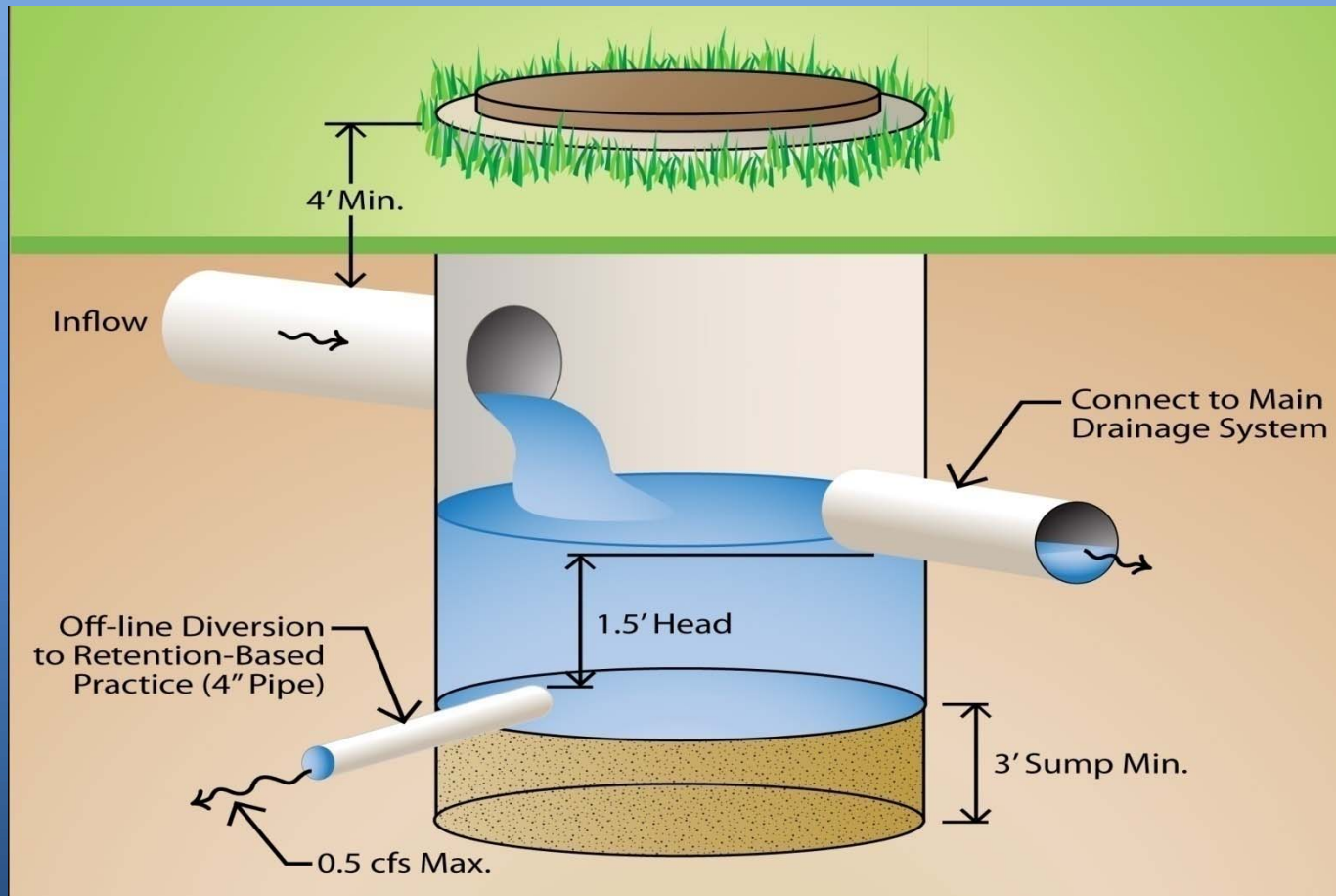
Multi purpose stormwater management technique

Possible design features:

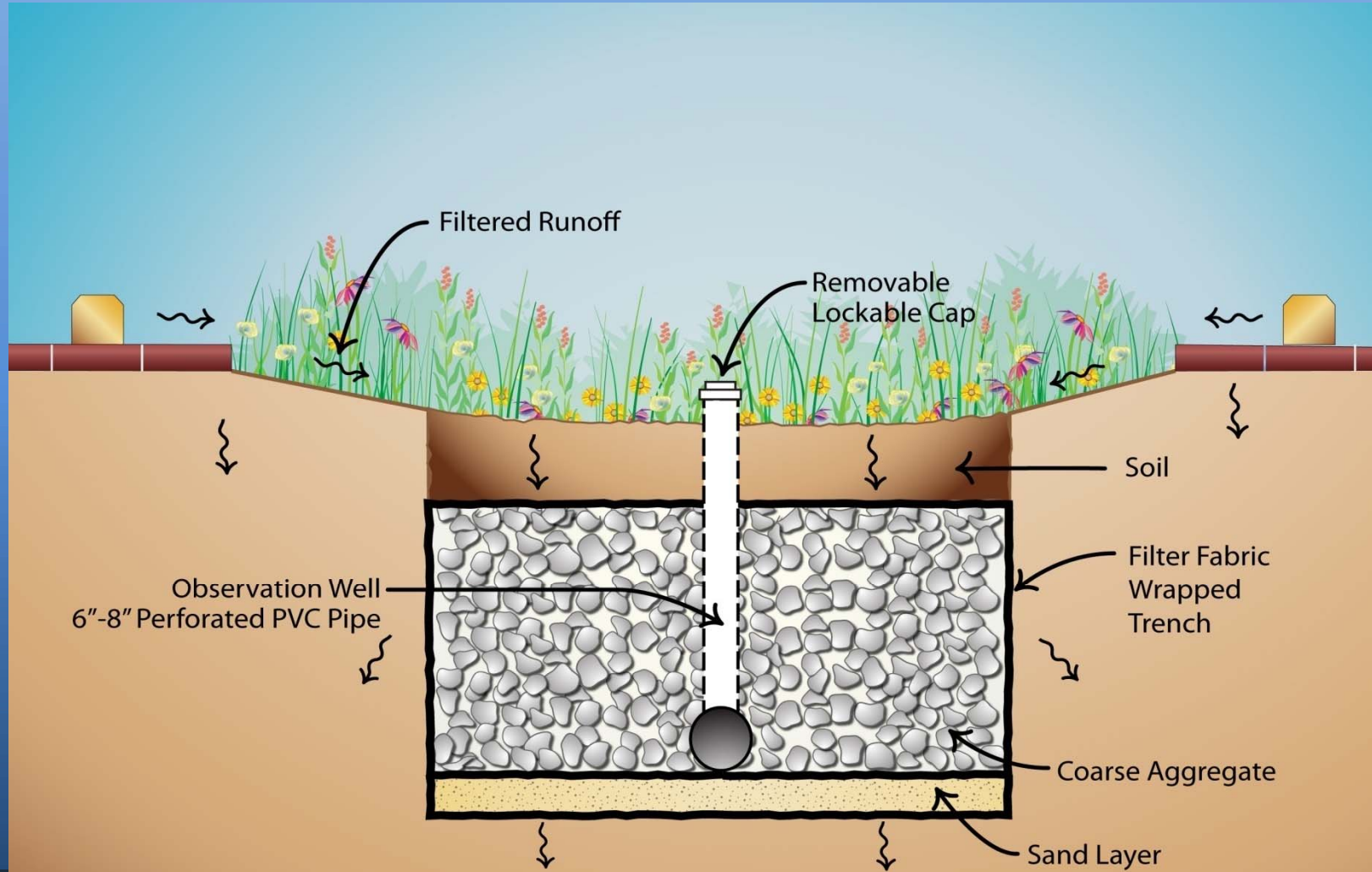
- WQ BMP- erosion, pollutant removal
- Flood control
- Watershed wide benefits



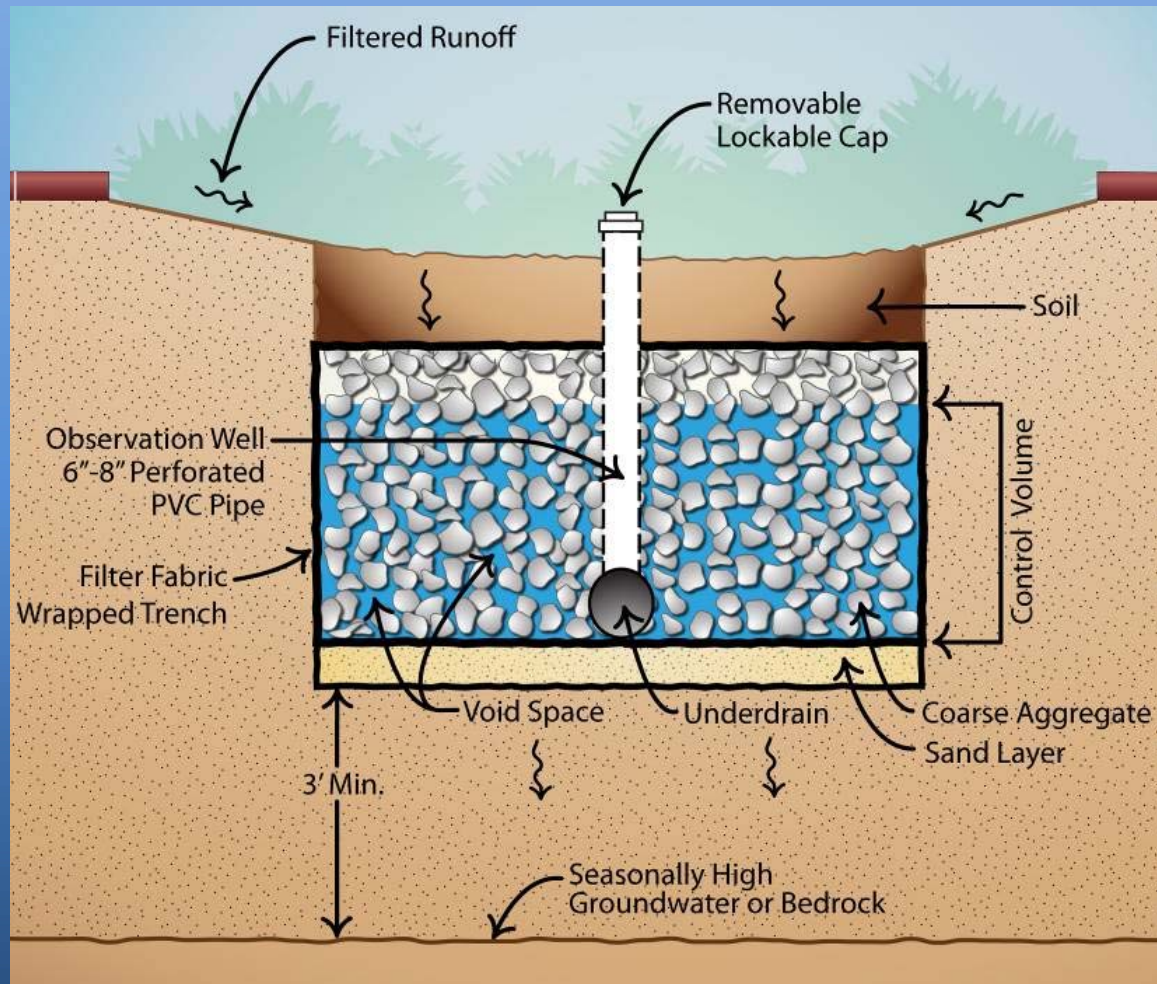
Volume Control



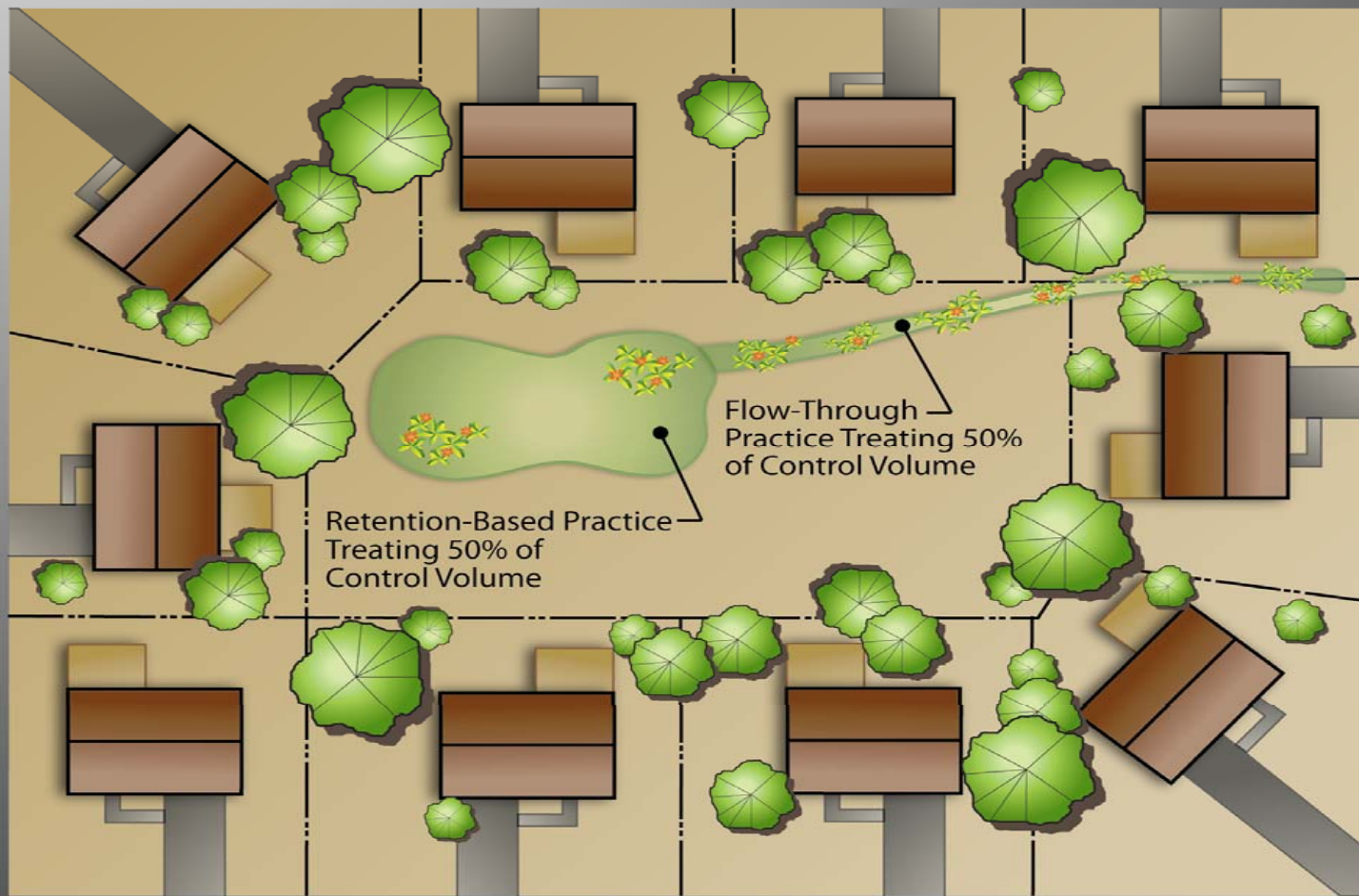
Infiltration Structure



Volume control



Street



Street



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VC Technical

- Treatment volume varies- 1” in proposed Cook WMO
- Could be water quality volume or “first flush also.
- Infiltration can be a problem in clay soil – often need a slow draw down.



Questions



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