



Green Infrastructure Workshop – April 25, 2016
(revised May 9, 2016)

How Will Agencies Identify Green Infrastructure Opportunities?: Project Review Process

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Permit Requirements

- Develop a Green Infrastructure Plan
 - Prioritize and map planned and potential projects
 - Coordinate with other related plans
 - Evaluate funding options
 - Track progress
- Conduct education and outreach

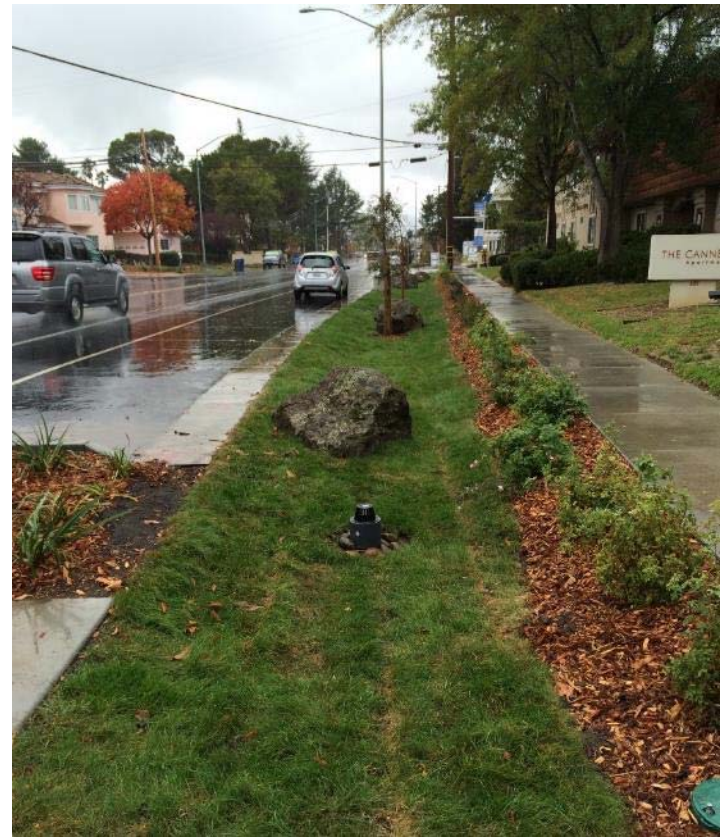


Conduct “early implementation”

- **Construct planned and funded projects**
- **Review public project lists and assess opportunity for incorporating GI elements**

Early Implementation

Hacienda Avenue, Campbell



Early Implementation

Martha Gardens Green Alleys, San Jose



Early Implementation Opportunity Analysis

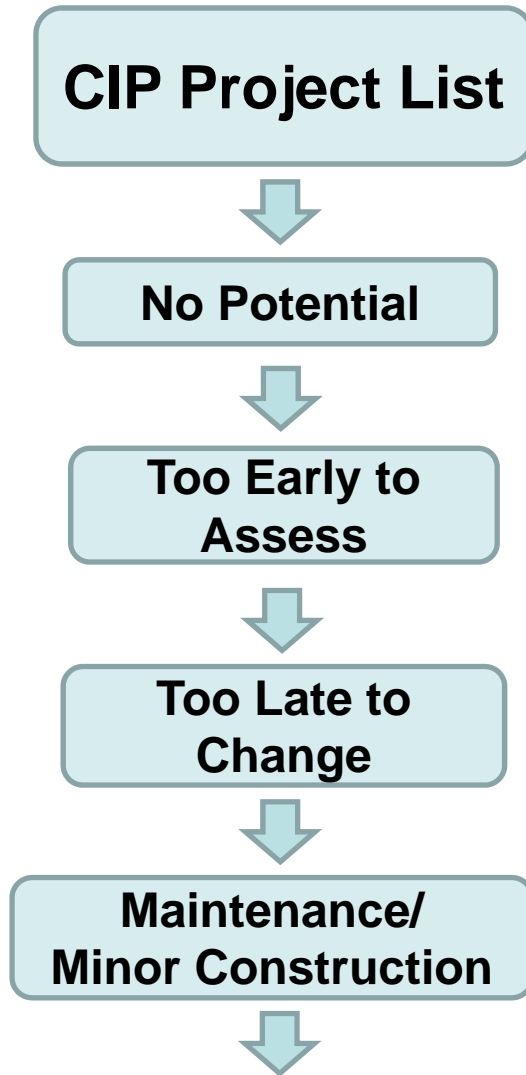
- Agencies must annually review lists of public projects and assess potential for green infrastructure
- Lists and results of review must be reported annually starting in 2016
- Regional guidance recently developed with process and criteria for conducting review and reporting



BASMAA Guidance for Identifying GI Potential in CIP Projects

- Two-part process for conducting reviews of proposed public projects:
 1. Initial Screening
 2. Assessment of GI Potential
- Process linked to tables in proposed Annual Report Format
- BASMAA guidance helps establish consistent process but may be adjusted to meet municipality's needs

Review Process – Part 1: Initial Screening

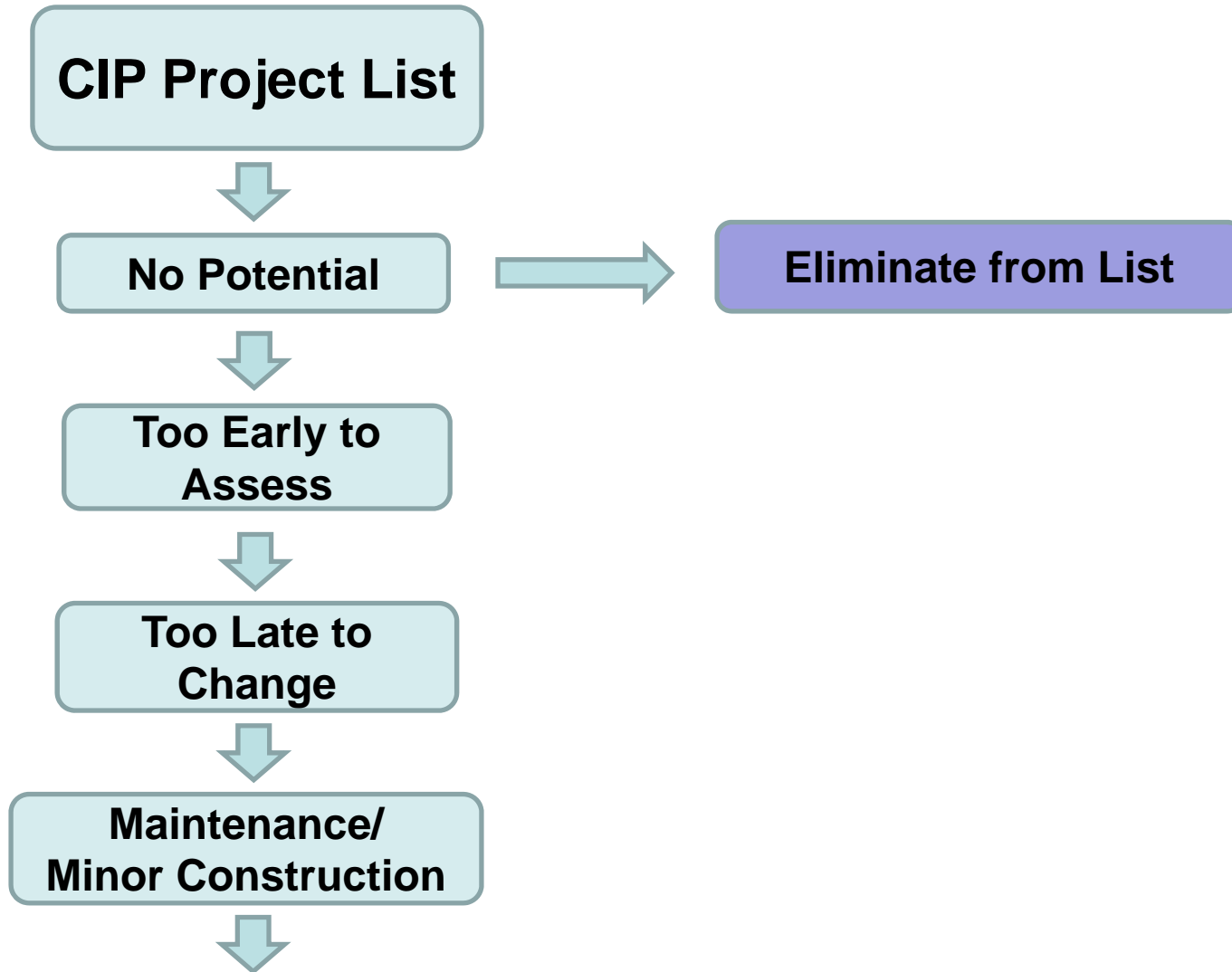


No Potential

Example Projects

- No exterior work (e.g., interior remodel)
- Exterior building upgrades or equipment
- Development or funding of municipal programs
- Technical studies, data collection or training
- Construction of street lights and traffic signals
- Minor bridge and culvert repairs/replacement
- Non-stormwater utility projects
- Equipment purchase or maintenance
- Irrigation system installation, upgrades or repairs

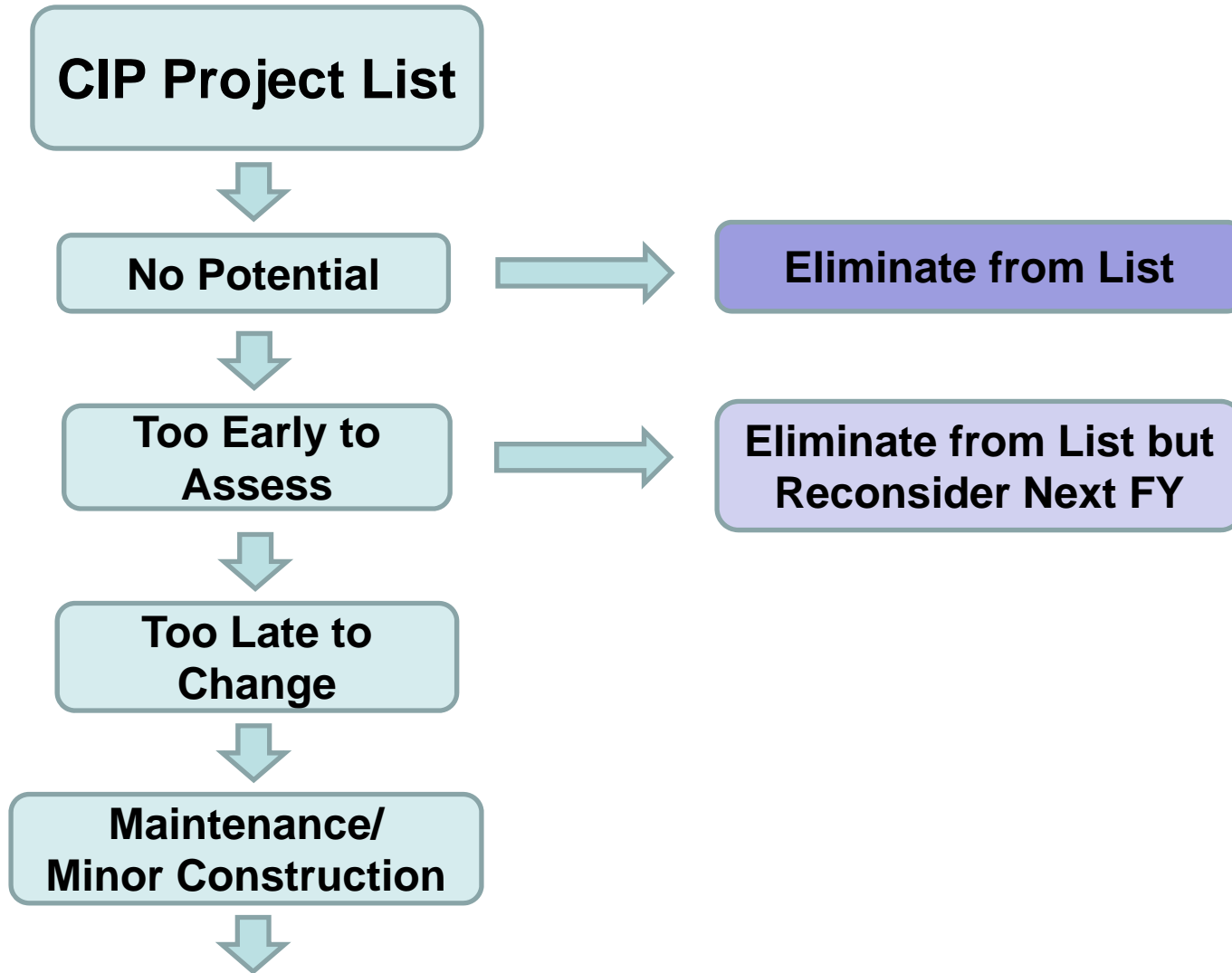
Review Process – Part 1: Initial Screening



Too Early to Assess

- Two scenarios:
 - Not enough information to assess project for GI potential; OR
 - Project is not scheduled to begin design within permit term (January 2016 – December 2020)
- If project is scheduled to begin design within permit term, need to track and conduct assessment when project moves forward to conceptual design

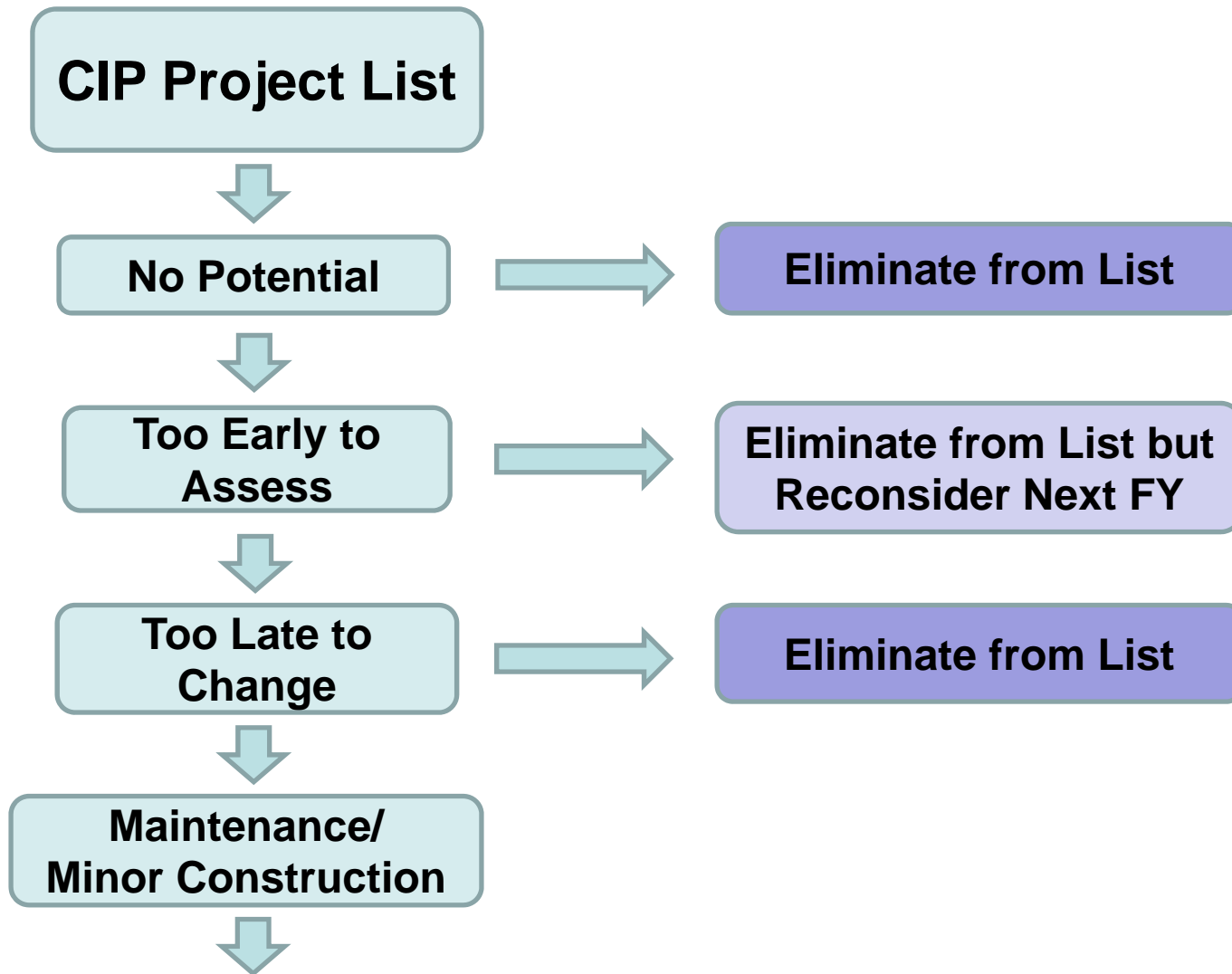
Review Process – Part 1: Initial Screening



Too Late to Change

- Two scenarios:
 - Project has gone to bid or is under construction;
 - Project is too far along in design stage to make changes
- No percentage of design completion is specified in guidance
 - Agency can use judgment based on budget and schedule considerations
 - Focus on projects early in the design stage

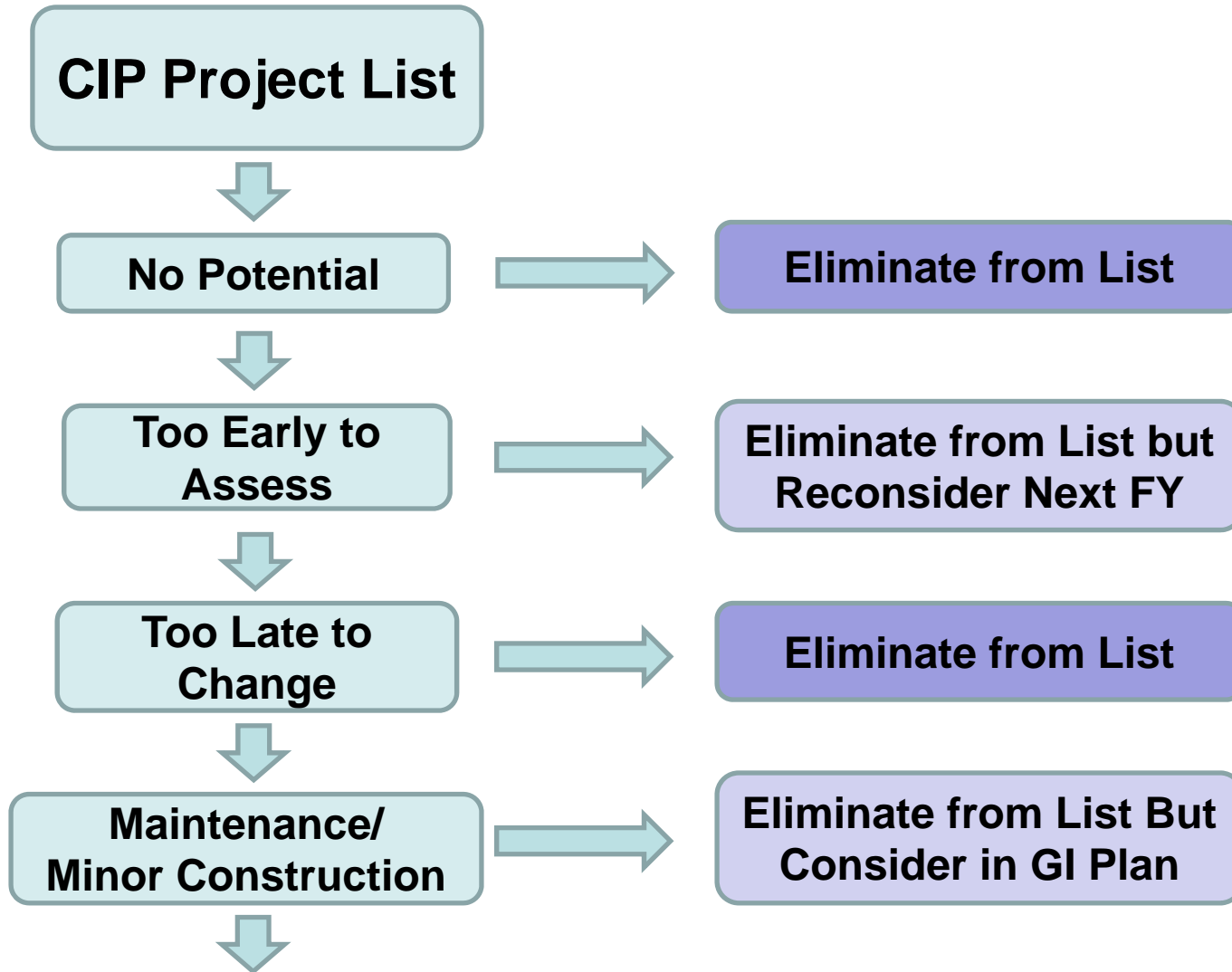
Review Process – Part 1: Initial Screening



Maintenance/ Minor Construction

- “Project” includes multiple work orders throughout portions of the jurisdiction, e.g.:
 - Pavement maintenance/replacement
 - Sidewalk, curb and gutter repairs
 - ADA ramps and other improvements
- Individual projects will not be reviewed, but:
 - Consider how to address as part of GI Plan
 - Consider evaluating certain types of projects and certain locations within jurisdiction

Review Process – Part 1: Initial Screening



Review Process – Part 2: Assess Potential

**Remaining
Projects on List**



**Conduct
Analysis for GI
Potential**



**Prepare List for
Annual Report**

Initial Assessment

- Does the project involve:
 - Alterations to existing building's roof drainage?
 - New/replaced pavement or drainage structures?
 - Concrete work?
 - Landscaping, including tree planting?
 - Streetscape and intersection improvements?
- Is this project subject to C.3 requirements?



Initial Assessment

- Is the project one of these retrofit types:
 1. Road Diet
 2. Bike/Ped Facilities
 3. Pavement Reconstruction
 4. Street Beautification
 5. Tree Planting
 6. Park/Landscaping Retrofit
 7. Drainage Reconstruction
 8. Parking Lot
 9. Building



Step 1: Information Collection/ Reconnaissance

- Alterations to buildings:
 - Locate roof leaders and discharge points
- Street and landscape projects:
 - Look for opportunities to substitute pervious for impervious pavements
 - Locate drainage structures and identify drainage pathways and tributary areas
- Potential LID facility locations:
 - Identify available landscaped or paved areas adjacent to or downgradient from paved or roof areas
 - If there are available locations, go to next step

Step 2: Preliminary Sizing and Drainage Analysis

- Drainage pathways and areas
 - Identify pathways to direct drainage from roof and pavement areas to potential LID facility locations
 - Delineate drainage areas
- Preliminary sizing guidelines
 - Dispersal to landscaping or pervious paving: 2:1 ratio (impervious to pervious)
 - Bioretention area: 4% of drainage area
- Underdrain connections:
 - Note if potential connection to storm drain (typically 2 – 2.5 feet below surface for bioretention)

Step 3: Barriers and Conflicts

- Identify any barriers or conflicts, such as:
 - Utility conflicts
 - Property ownership
 - Availability of water supply for irrigation
 - Integration of GI features, vs. “add-on”
- Presence of barriers or conflicts does not necessarily mean GI is infeasible but may affect cost or public acceptance

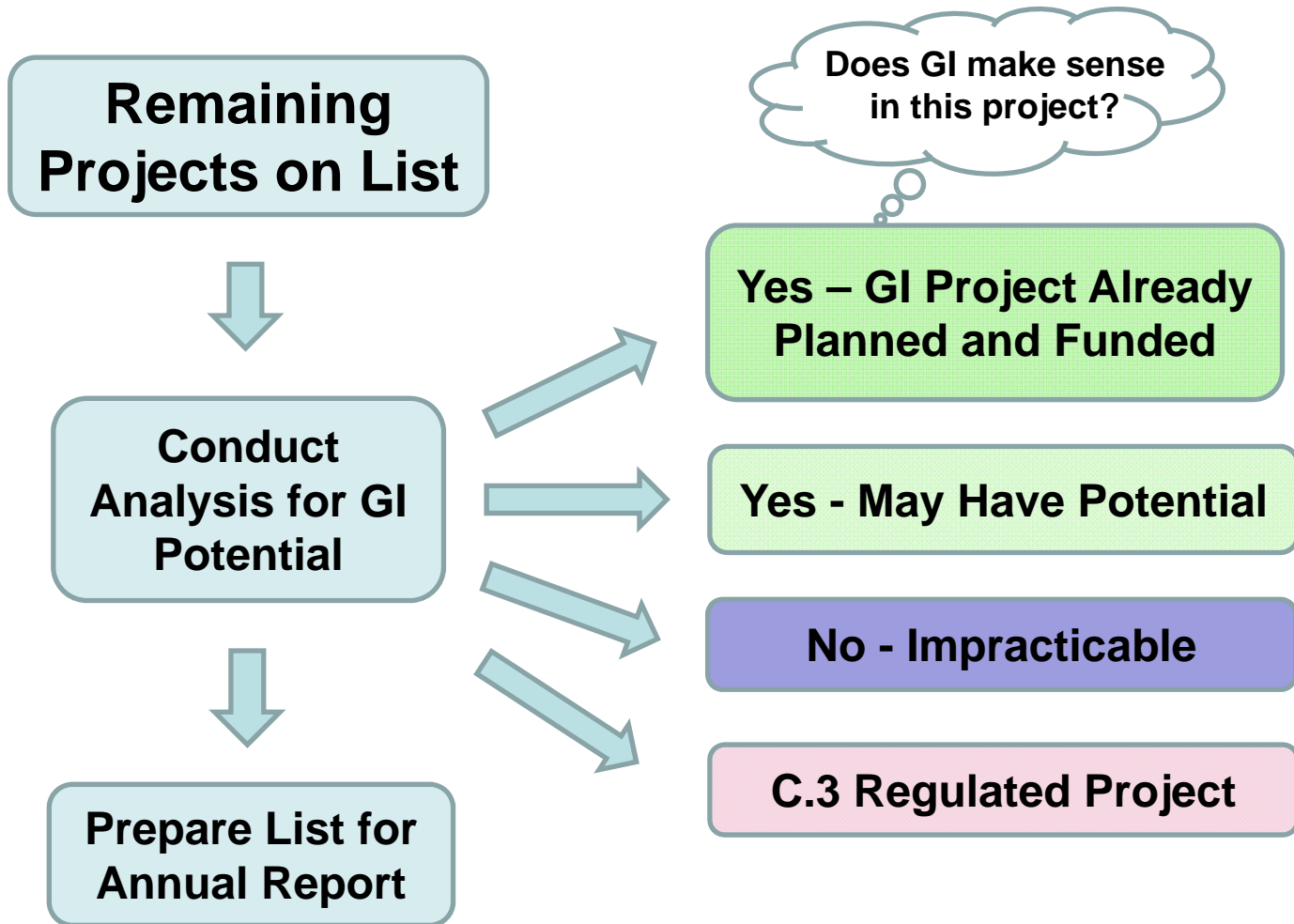
Step 4: Budget and Schedule

- Budget considerations:
 - Sources of funding that might be available for GI
 - Potential savings achieved by integrating with other planned projects (e.g., bike/ped, beautification, etc.) or reducing cost of “gray” drainage facilities
- Schedule considerations:
 - Constraints on schedule due to regulatory mandates, grant requirements, etc.
 - Whether schedule allows time for any design changes needed to incorporate GI
 - Whether schedule allows time to align separate funding source for GI features

Step 5: Results of Assessment

- Does the project have GI potential?
 - Consider results of previous steps
 - Consider ancillary benefits of GI:
 - Improves quality of public space
 - Provides parks and play areas
 - Provides habitat and trees
 - Mitigates heat island effects
- Does it make sense to include GI in this project, if funding were available for the incremental costs of GI elements?

Review Process – Part 2: Assess Potential



Annual Reporting Requirements

- Prepare and maintain a list of:
 - GI projects, public and private, already planned for implementation during permit term (not including C.3 regulated projects)
 - Infrastructure projects planned for implementation during permit term that have potential for GI
- Submit list with summary of:
 - Planning or implementation status of each project
 - How each public project with GI potential will include GI measures to the MEP during permit term; OR
 - If public project has no GI potential, why GI measures were impracticable to implement

Annual Report Section C.3.j.ii.(2)

Table A – Public Projects Reviewed for Green Infrastructure

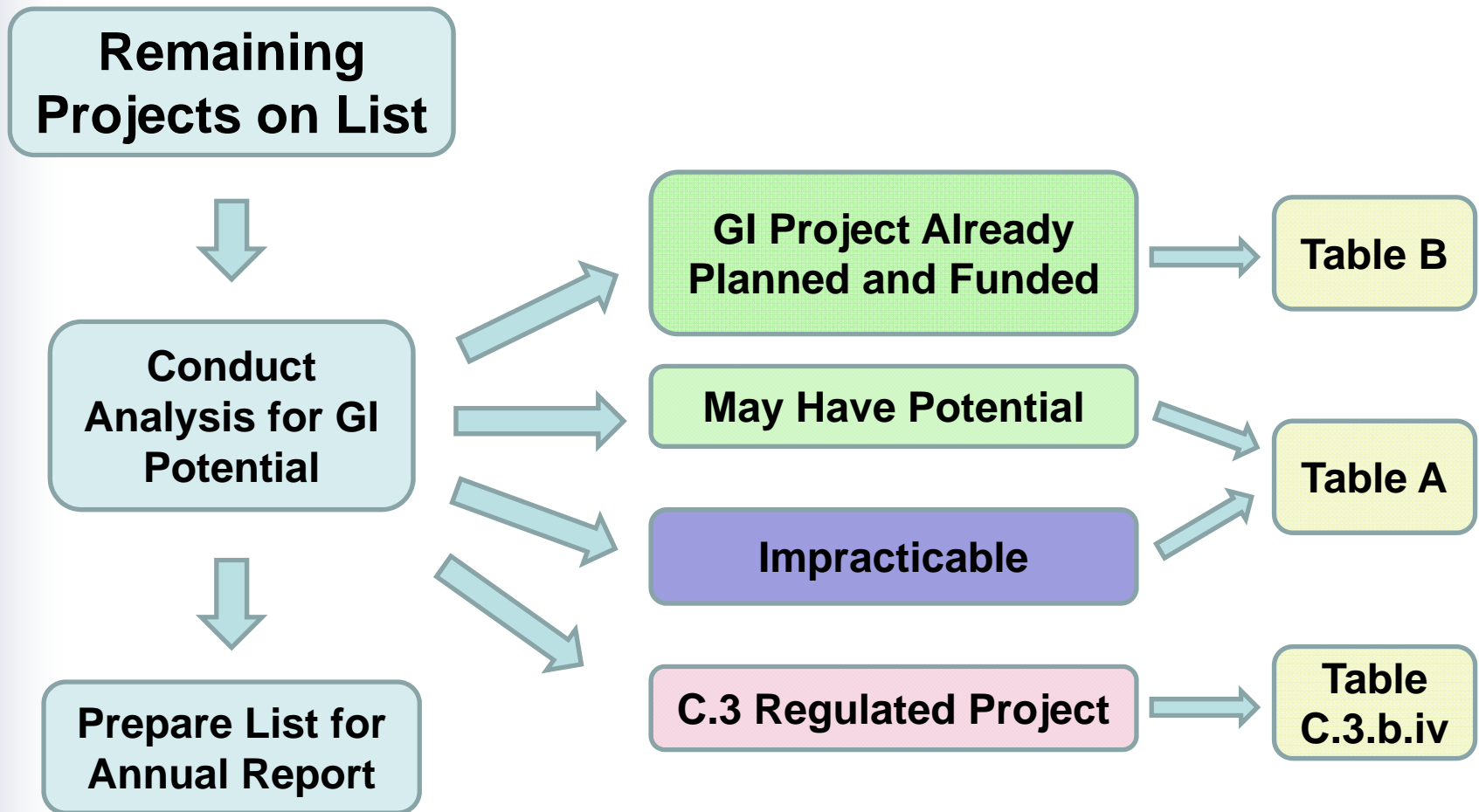
C.3.j.ii.(2) ▶ Table A - Public Projects Reviewed for Green Infrastructure				
Project Name and Location ⁴¹	Project Description	Status ⁴²	GI Included? ⁴⁶	Description of GI Measures Considered and/or Proposed or Why GI is Impracticable to Implement ⁴⁷
EXAMPLE: Storm drain retrofit, Stockton and Taylor	Installation of new storm drain to accommodate the 10-yr storm event	Beginning planning and design phase	TBD	Bioretention cells (i.e., linear bulb-outs) will be considered when street modification designs are incorporated

GI Included?
Yes, No, or TBD

Table B – Planned Green Infrastructure Projects

C.3.j.ii.(2) ▶ Table B - Planned Green Infrastructure Projects			
Project Name and Location ⁴⁷	Project Description	Planning or Implementation Status	Green Infrastructure Measures Included
EXAMPLE: Martha Gardens Green Alleys Project	Retrofit of degraded pavement in urban alleyways lacking good drainage	Construction completed October 17, 2015	The project drains replaced concrete pavement and existing adjacent structures to a center strip of pervious pavement and underlying infiltration trench.

Review Process – Part 2 Reporting



Future Annual Reporting

Table A – Public Projects Reviewed for Green Infrastructure

C.3.j.ii.(2) ► Table A - Public Projects Reviewed for Green Infrastructure

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↓
If project with GI is funded, move to Table B

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**GI Included?
 If No, remove from list
 If Yes or TBD, keep on list**

Table B – Planned Green Infrastructure Projects

C.3.j.ii.(2) ► Table B - Planned Green Infrastructure Projects

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Questions / Discussion



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