The following memorandum summarizes the findings from our interviews with private real estate developers working in the City of Houston. Interviews were conducted to obtain information on project costs, familiarity with green stormwater infrastructure (GSI), challenges with permitting projects in the City of Houston, and ideas for how to incentivize the use of GSI.

1.0 Process Overview

On May 16, 2018, the City of Houston convened a meeting with real estate development trade associations to identify participants in the GSI incentives study. The meeting was attended by representatives of the American Council of Engineering Companies, the Urban Land Institute – Houston District Council, the Greater Houston Builders Association, and the Houston Real Estate Council (the “trade groups”). During the meeting project team, led by R. G. Miller Engineers, Inc. (RGME) explained the purpose of the study, the types of developer participants desired, the level of effort required by participants, and the overall schedule. RGME explained that the team hoped to obtain information from developers working at all scales and types of development, including commercial, residential, and institutional projects.

On July 11 and 12, 2018, the city convened a kick-off meeting with the developers identified by the trade groups. The consulting team presented an overview of GSI, discussed some of the incentive concepts under consideration, reviewed a detailed Project Information Template form (provided in Enclosure A) that participants were asked to complete for each project they agreed to share with the project team, reviewed the level of effort required to complete the effort, and reviewed the schedule.

From August 1, 2018 to September 25, 2018, the project team conducted in-person debrief meetings with each of the developers who had completed a Project Information Template to discuss the content of each template and to more thoroughly understand project details.
2.0 Findings

The following subsections provide a summary of the findings from each of the Project Information Templates and debrief meetings. Due to the limited number of completed Project Information Templates received and the lack of existing GSI projects, the results of this process should not be viewed as definitive. These findings will likely help to inform the development of incentives and to estimate threshold points in later phases of this project.

2.1 Single Family Residential Development with Public Infrastructure

A non-profit developer of a 26-acre subdivision with about 111 small lot homes intended for low to moderate-income owners indicated that their developer participation contract (DPC) with the city was a key element of their business model. The developer reported that their DPC provided a cash reimbursement from the city of 70% of the cost of water, sewer, and drainage utilities on the tract, plus $2,500 per home. The developer reported that the city assumed ownership and operation of these utilities and the roadways after project completion. The developer reported that the project did not include any GSI on the private lots; however, the developer expressed interest in implementing grey water and rainwater-harvesting systems in future projects.

The developer reported that the project included three 7,500 square foot pocket parks to meet the required landscape area reserve requirements. The developer reported that they provided two trees in the front yard of each home as required by city code.

The developer reported that they purchased the land for $500,000 ($19,230 per acre), constructed the streets and utilities, and the homes, with much of the labor and materials necessary to build the homes donated. Total estimated costs for the land, site development, and home construction was reportedly $3.18 million (prior to city reimbursement). The developer indicated that they sold the finished homes for $120,000 each, realizing $13.32 million in gross proceeds.

Stormwater flowed over building roofs, across yards and driveways, along public streets, into public curbs, inlets, through public traditional concrete storm sewer pipes, into a traditional, end-of-pipe, public dry detention basin, with a trash rack for stormwater quality control, and hence to a HCFCD channel. The city currently does not utilize GSI in public rights of way and storm sewer systems, except in a very small number of pilot projects. The project sponsor’s use of GSI in the public rights of way and storm sewer systems serving this type of development, if acceptable to the city, might help reduce the overall capital cost of the infrastructure, as illustrated in prior studies. The city and the developer could pass these savings on to the homeowners or the savings could help reduce project-financing costs and defray other development costs incurred by the non-profit.

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The developer indicated that they built stormwater conveyance systems and the developer indicated that the City of Houston accepted the system as a public utility and reimbursed the developer for 70% of the associated costs. The developer indicated that they provided traditional end of pipe stormwater detention with a trash rack. The developer indicated that the City of Houston accepted the system as a public utility and reimbursed the developer for 70% of the associated costs.

### 2.2 Urban Patio Homes

A developer-builder of an urban, 12 lot, patio-home, single-family residential development inside the loop was most concerned with permitting time delays. They reported that permits for each home in their development took 80 days to obtain. The developer-builder said they sold the two-story patio homes, which sit on 25 ft. by 131 ft. lots, for about $500,000 each. The developer said they did not provide any detention on the project because the development type and lot size did not trigger detention requirements under Chapter 9 of the Infrastructure Design Manual in effect at the time. The developer reported detention costs on other projects as ranging from $5/cubic feet for a simple excavated earthen basin to $20/cubic feet for underground vault type systems.

The developer suggested that the developer’s authorized use of the public alley, for improvements or for GSI, would add value to the project and the neighborhood. The developer suggested that the poor condition of public alleys currently hinders development and home sales and ally improvements, such as GSI implementation would help the situation. The developer also indicated that the city was inflexible in their enforcement of the setback line requirement for the garage door (relative to the public right of way). The builder also suggested that the required setback between the building envelope on a corner lot and the public right of way should be more flexible. Current rules require that a building sitting on a corner lot be located the same distance from both property lines. The city might be able to relax this requirement in exchange for GSI use.

The developer indicated concern about the city-imposed “open space” fee of $800 per unit. The developer understood that the city used this fee to create new parkland, but questioned whether this was actually occurring. The developer suggested that the city should provide more choices, more flexibility, and quicker permitting to incentivize GSI. The developer suggested that a 17 ft. setback for garages was too large and that it should be changed to 15 ft.

The developer said they did not provide stormwater conveyance system cost. The developer said they provided no stormwater detention on this project because none was required by Chapter 9 of the Infrastructure Design Manual.

### 2.3 Urban Town Homes

The developer of an urban, three-unit, town home development with one detached and two attached units and a shared driveway was most concerned with permitting time and a building code issue that was not identified until very late in the construction process. This developer reported that permitting took five months. During plan review, framing review, and other inspections the developer reported that the city failed to notify them that the windows on the second floor were not large enough to serve as fire
escape routes as required by the applicable building code. The developer said the city did not inform the developer of this issue until project construction was substantially complete.

The developer reported that they used a permeable driveway product consisting of aggregate secured with a plastic lattice structure at a cost of $8 per square foot, instead of traditional concrete at a cost of $5 per square foot to eliminate the requirement to install detention. The engineering plans showed a concrete shared driveway with 949 cubic feet of detention provided in the driveway, in the backyards, and in the storm sewer system. The design plans indicated that 818 cubic feet of detention was required by code.

The developer reported a concern with the tree and shrub requirements imposed by the city under Chapter 33, Article V, of the City Code of Ordinances. The city required planting of three trees, one for each unit, along the public right of way, instead of in the side yards or backyards of the units. The city could encourage GSI use by adding some flexibility to this requirement.

The developer suggested that the city might consider allowing green roof areas with public access to serve as open space for the purposes of complying with the open space reserve requirements in city platting regulations. This would help reduce developer fees to the park fund and would help free up additional developable land.

The developer said they did not provide stormwater conveyance system cost. The developer said they provided 949 cubic feet of stormwater detention at no additional cost because it was provided in the yard and driveway grading and in the conveyance pipes.

2.4 Retail Shops and Bar

A civil engineer performed a feasibility study evaluating the site development costs to convert an existing warehouse into retail shops and a bar. The engineer reported that the project did not get built. The engineer reported the lot size was 39,200 square feet, with about 9,000 square feet of finished interior building space. At the time of the feasibility study, the city did not require any stormwater quality facilities on sites less than 1 acre, so the work would not require any stormwater quality facilities. The engineer estimated that about $7,000 of detention would be required, utilizing a permeable paving system with aggregate porosity providing the required volume of 2,178 cubic feet, at a cost of $3.21 per cubic foot.

The engineer suggested the installation of a $2,000 rainwater harvesting system. The engineer reported that the change in property use triggered the need to add additional parking spaces that would not fit on existing paved areas. The engineer reported that about 19,600 sq. ft. of parking would be needed for code compliance.

The engineer examined methods to avoid an increase in impervious area and, thus, to avoid the requirement to add additional detention. The engineer reported that the requirement to install shrubs and trees around and in parking lots is very prescriptive and the city should consider modifying the list of shrubs and trees to include types appropriate for GSI installations. The city currently requires the use of 24-inch reinforced concrete pipe or larger, to connect private storm sewers to public storm sewers. The
city should consider changing this, because that size is frequently much larger than necessary to convey the actual discharge rate.

The engineer suggested that the city should add more flexibility to rules governing use of the public right of way and perhaps allow more encroachment agreements that would maximize the public and private benefits in the boundary between public land and private land. The engineer also suggested that fee reductions should be granted in exchange for the installation of electric vehicle charging stations, permeable paving systems, and GSI. The engineer suggested that GSI could be installed in public alleys. The engineer also suggested that a city-run awards or recognition program might help incentivize GSI.

The engineer estimated that the project would require a stormwater conveyance system costing about $26,000, about 25% of total estimated project rehabilitation costs. The engineer estimated that no detention would be required on the project, based on the date of the study.

2.5 Four-Story Office and Apartment

A civil engineer performed a feasibility study of a four-story building that would include both apartments and office space. The developer proposed to build the project on a 24,800 square foot (0.57 acre) greenfield site along a bayou with some floodplain encroachment. The engineer determined that the project should provide about 15,000 square feet of parking and 2,600 square feet of landscaping to meet code requirements. The planner envisioned an elevated parking structure wrapped around the building to achieve the parking requirement. The engineer proposed a traditional project with no GSI.

The site did not require any stormwater quality facilities due to its small size. The engineer expressed concern that stormwater conveyance was limited to reinforced concrete pipe that was no less than 24” in nominal diameter. The engineer reported that this particular project was planned with a zero-lot line setback, due to the surrounding publicly owned open space along the bayou.

The engineer estimated that stormwater conveyance systems would be required at a cost of $26,000, representing about 2% of total estimated project costs. The engineer estimated that about 15,680 cubic feet of detention was required to mitigate floodplain fill at a cost of $180,000 and about 10,454 cubic feet of detention was required to mitigate the increase in impervious cover at a cost of $120,000. The engineer proposed a below grade vault system to provide the required total 26,136 cubic feet at a cost of about $11.48 per cubic foot.

2.6 Low Rise Commercial Redevelopment

The developer purchased a 6.5-acre site with an existing 45,000 square foot building and parking lot and rehabilitated the building to serve a new commercial tenant. The developer planned to hold the asset, earn lease revenue, and eventually sell the project to realize asset appreciation. The developer reported that customers would access the site, which is located outside of the IH-610 loop, via automobile. The developer reported that an existing private storm sewer system drains the building roof and 40% of the 120,000 square foot surface parking lot to an existing detention basin with about 35,000 cubic foot of surface storage. About 60% of the existing parking lot drains via sheet flow to adjacent public rights of
The developer reported total construction costs were $6 million. The developer reported that they built a traditional project with no GSI.

The developer indicated concerns regarding the adequacy of the existing detention facility, which the original site developer installed prior to 2000 and which only serves 40% of the property. The developer reported a $1.0 million additional cost to upgrade the detention to meet current requirements. The developer reported that the project financials did not support this added cost, so the developer elected not to perform these upgrades.

The developer reported that the inefficient and uncoordinated permitting process took five months. The developer indicated that permitting should have taken only two months. The developer paid $150,000 for plans and permitting and $50,000 in impact fees.

The developer reported that the redevelopment reduced impervious site area from 215,000 square feet to 210,000 square feet. Because permitting occurred prior to September 1, 2018, the developer reported that site work did not include additional detention.

The developer expressed concern about the detention and floodplain requirements that became effect on September 1, 2018. The developer indicated that the city should impose detention requirements using a hydrologic basis, so that the post-development flowrate does not exceed the pre-development flowrate, instead of using the impervious area in the calculation. This would sometimes allow a smaller volume of detention to be provided while still achieving the objective of no increase in the peak site runoff rate. They suggested that a property tax deduction or deferment would incentivize GSI use. They also suggested that a certain amount of the City of Houston’s collected drainage fee could provide a cash reserve that could be used to incentivize GSI. The developer also suggested that imposing a reduced detention requirement in exchange for the use of GSI would incentivize its use.

The developer also suggested that the city should allow multiple property owners and public entities to collaborate and cooperate on drainage issues. The city should include the use of GSI in development agreements it executes with developer partners. The developer also suggested that the city should allow the use of natural vegetation that requires less irrigation.

The developer evaluated the costs associated with rehabilitation of the existing building along with reuse of the existing site parking and drainage facilities and compared that total cost with the cost of clearing the site and building all new site parking, drainage, and a new building. The project team reported that the cost to build new (approximately $1.5 million higher) was not justified by the higher quality end product; therefore, the developer elected to reuse site facilities and the building instead.

The developer maintained existing stormwater conveyance systems at essentially no additional cost. The developer maintained 35,000 cubic feet of existing stormwater detention at essentially no additional cost.

2.7 Low Rise Mixed Use Redevelopment
The developer demolished an existing development and then constructed this five story mixed use redevelopment constructed on about 14 acres inside the 610 loop. The developer reported that the new project included 662,000 square feet of finished interior space, a 1,068-space parking garage, about 1.3 acres of landscaping. The developer reported the parking area provided met commercial requirements and exceeded code requirements. The developer considered adding a green roof to both the main buildings and the parking garage, in order to reduce the impervious surface area, but the added cost to add a roof to the top floor of the parking garage precluded this option. The developer’s design team indicated that the allowed trees and shrubs don’t perform well in GSI applications and additional or alternative species should be added to the regulations. Details regarding this issue were not provided.

The developer reported that the project team sought to provide a private valet parking lane in the public right of way, but that request was denied by the city. The developer reported that the design team indicated that the city should enter into encroachment agreements with private developers to allow for creative potential use of portions of the public right of way for GSI and other purposes that achieve public and private functional objectives, such as parking, stormwater management, bike lanes, pedestrian areas, open space, etc.

The developer reported that the project incurred impact fees for water of $46,900 and for wastewater of $95,500, and permitting costs of $250,000. The developer reported a total construction cost for the project was $320 million. The developer did not provide any stormwater quality facilities because the project was permitted prior to a rule change.

The developer reported that the minimum width of the loading dock driveway forced a redesign of that portion of the site. The developer reported that they provided 45,600 cubic feet of detention at a cost of $550,000, representing about 0.20% of total project costs. The developer reported that they provided stormwater conveyance systems at a cost of $500,000, representing about 0.16% of total project costs.

### 2.8 Gated Single-Family Residential Development

The developer provided information about a 5-acre development with 51 lots. The developer reported that they built a gated, single-family residential development with private roads and utilities. The project reportedly provided homes of average floor plans of 2,700 square feet and an average sale price between $500,000 and $600,000 each. The developer indicated they provided two off-street parking places for each residence in individual two-car garages. The developer indicated they provided a total of six additional parking spaces for visitors in common areas. The developer suggested that parking city-imposed requirements could be reduced in exchange for the use of GSI. The developer indicated that association rules will prohibit on-street parking.

While the developer reported that tree and shrub requirements did not lead to challenges on this project, they suggested that the use of GSI could be used to address lost trees. They also suggested that permeable paving systems be allowed in more circumstances. The developer suggested that the city should add additional flexibility to the width requirements for permanent access easements (PAEs) to help promote the use of GSI. The developer expressed concerns about the 25-ft. set-back requirement along major thoroughfares, which prohibits building construction in that space. They suggested that the set-back
distance should be reduced in exchange for GSI use. The developer suggested that a reduction in required detention volume would serve to incentivize the use of GSI.

The developer reportedly provided stormwater conveyance systems at a cost of $566,000, representing about 2.4% of total project costs of $23 million. The developer reportedly provided 17,500 cubic feet of stormwater detention at no additional cost, because detention was provided in the conveyance system and in the private streets. The developer indicated if the project was permitted after September 1, 2018, then 68,800 cubic feet of detention would have been required; an increase of almost 300%.

2.9 Mid Rise Multifamily and Commercial New Development

The developer reported information regarding a 1.9‐acre portion of a larger urban infill project that will include residential, office, retail, food and beverage, and hotel space for rent, lease, and purchase. The developer reported that the 1.90‐acre portion of the project will include multi‐family residential with some commercial space. The developer reported that the project will include both below grade and above grade garage structure parking. The developer reported that office space will be LEED certified to attract tenants and that green space will be central to development to attract retail and food and beverage customers. The developer reported that the development will include private interior roadways.

The developer reported that entitlement schedule certainty was more critical than overall duration. Total construction costs are reportedly estimated to be about $150 million. The developer reported that they almost always provide more parking spaces than code requires for business reasons. The developer reported that the multi‐family residential platting requirements are flexible and they don’t see the need for any changes.

The developer estimates that about 1.05 ac‐ft of pumped detention will be required to serve the 1.90 acre portion of the development (in accord with post‐September 1, 2018 requirements). The estimate is based on 90% impervious cover. The developer indicated that stormwater quality will be addressed with a trash rack or a similar device.

The developer indicated they provided stormwater conveyance systems at a cost of $244,000, representing about 0.16% of project costs. The developer indicated they provided 45,717 cubic feet of below grade, pumped stormwater detention at a cost of $379,077, representing 0.25% of total project costs.

2.10 Large Waterfront Multi‐Family Development

The engineering team for a large, waterfront, multi‐family development still in design provided information about a 136‐acre portion of a 308‐acre overall development program. The engineer reported that the 136‐acre tract would include 66 buildings on piers with a total of 6,000 living units. About 12,000 parking spaces are planned in elevated structures below the living spaces but elevated above the natural ground surface to minimize wetland impacts. The engineer reported that the project will include about 13 acres of landscaped areas, but planners oriented the project to preserve as much of the natural areas around the tract as possible.
The engineer reported total finished floor space will be about 5.9 million square feet and the cost for the development of the 136 acres will be $551 million. The engineer reported that onsite stormwater conveyance will cost $7 million, or about 1.3% of total costs. The engineer reported that pond systems will provide about 70 acre-feet of detention for stormwater mitigation and 105 acre-feet for flood mitigation purposes at a cost of $1.2 million. Ponds and trash racks will provide stormwater quality treatment. Engineer reported that impact fees for water and wastewater combined will likely equal $4 million.

Engineer wanted to place wet utilities under the roadway pavement to reduce the project footprint and impacts to existing wetlands, but was unable to do that because of current city rules. The engineer reported that the city’s revised floodplain ordinance and elevation requirements has significantly increased project costs. Engineer indicated that natural area preservation should be incentivized. Engineer suggested that tree replacement will be challenging to accomplish giving the extent of the site wetlands and natural areas. Other incentives mentioned included: expedited permit reviews, reduced impact fees, and reduced property taxes.

3.0 Discussion of Developer Feedback

Developers shared feedback on the land development entitlement process and provided thoughts about the types of incentives that could be implemented to encourage the use of GSI.

3.1 Incentive Ideas

The key ideas developers shared for how the City could motivate developers to use GSI are summarized below:

- **Open Space Reserves**: Provide reduced dedication of open space reserves in exchange for GSI use, perhaps by building upon or modifying the existing park funding program.
- **Developer Participation Contracts or Agreements**: Provide incentives in the terms and conditions of DPCs or DPAs, perhaps with GSI built in the public right of way and long term maintenance agreements and bonding.
- **Permitting Time Certainty**: Provide a more certain time frame for the permitting process (as opposed to shortened permitting time).
- **Set Back Lines**: Reduce setback line distances in exchange for GSI use.
- **Cash Incentives**: Provide cash incentives realized from either deferred property tax bills, waived or reduced utility impact fees, or payments from some other dedicated fund would all be helpful.
- **Tree & Shrub Requirements**: Provide plant list that is more consistent with GSI facilities. Provide options to relocate trees or shrubs away from the public right of way in exchange for GSI use along public right of way.
- **Right of Way Use**: Use encroachment agreements (including long term operations and maintenance provisions) to enhance the use of the boundary between private and public property. Encourage creative GSI use of the public right of way that is not used for vehicle or pedestrian traffic.
- **Rainwater Harvesting**: Encourage the use of rainwater harvesting systems and provide streamlined entitlement process.
- **Gray Water**: Encourage use of gray water systems and provide streamlined entitlement process.
Parking Requirements: Provide reduced parking requirements in exchange for GSI. This may be underutilized in some types of development, because mixed use, beverage and food, commercial developments tend to provide more parking than required by code for business reasons.

Detention Requirements: Provide reduced detention requirements in exchange for the use of GSI.

Detention Volume Trading: Provide banking and trading platform for detention volume.

Xeriscaping: Allow the use of low water-demand plants in plant lists and other landscaping requirements.

3.2 Summary of Cost Information

Table 3-1 presents a summary of the cost information obtained from the participating developers.
### Table 3-1 Summary of Cost Information

<table>
<thead>
<tr>
<th>No.</th>
<th>Condominium</th>
<th>Description</th>
<th>Total Cost ($)</th>
<th>Total Stormwater Conveyance Cost ($)</th>
<th>Stormwater Conveyance Type</th>
<th>Detention Type</th>
<th>Required Detention Volume (ac-ft)</th>
<th>Provided Detention Volume (ac-ft)</th>
<th>Detention Cost Frac. (F of Total)</th>
<th>Stormwater Quality Feature</th>
<th>Total Stormwater Quality Cost ($)</th>
<th>Stormwater Quality Cost Frac. (F of Total)</th>
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<td>1</td>
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<td>Reused Existing Dry Basin</td>
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<td>51</td>
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<td>YES All Rise Multi-Family and Commercial New Development</td>
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<td>300</td>
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<td>4,000 apartments</td>
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<td>58,800</td>
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<td>Detention Vault</td>
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<td>43,962</td>
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<td>14.53</td>
<td>9</td>
<td>126,428</td>
<td>Inlets and Pipes</td>
<td>Not Provided</td>
<td>Detention Pond</td>
<td>$ 320,000</td>
<td>40,000</td>
<td>0.12</td>
<td>NA</td>
<td>NA</td>
<td>NA</td>
</tr>
</tbody>
</table>
3.3 Unit Cost Ranges

Developer feedback and cost information indicates the full costs associated with stormwater conveyance systems, detention facilities, and stormwater quality facilities should be examined to determine the design of incentive programs. Table 3-2 presents a summary of the key unit cost information obtained from developers.

<table>
<thead>
<tr>
<th>Table 3-2 Summary of Unit Cost Information</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Unit Cost</strong></td>
</tr>
<tr>
<td>Onsite, Private Drainage Conveyance System</td>
</tr>
<tr>
<td>Onsite, Private Detention</td>
</tr>
<tr>
<td>Onsite, Private Stormwater Quality Facilities</td>
</tr>
</tbody>
</table>

NOTES:

a. Based upon six projects with necessary information to calculate unit costs.
b. Based upon five projects with necessary information to calculate unit costs.
c. Only one project provided the necessary information to calculate the unit cost.

4.0 Next Steps

The consulting team will use the developer information received during this phase of work to proceed with a further review of financial information, identify implementation barriers, and challenges, develop draft incentive programs, and identify potential GSI techniques to be incentivized. These future tasks will be outlined in subsequent memoranda.
ENCLOSURE A
DEVELOPER PROJECT INFORMATION TEMPLATE
The City of Houston’s Chief Resilience Officer is conducting a study to develop a suite of green stormwater infrastructure incentives that will propose changes to the development and redevelopment process sufficient to create meaningful financial, economic, business, or similar benefits so that private development or redevelopment projects utilize green infrastructure for business reasons while achieving a similar or better stormwater management level of service.

This form is intended to collect information from real estate development and redevelopment professionals about a variety of things, including: ideas about what incentives might include or look like; current process challenges and permitting challenges; perceived opportunities for process changes; ways to save time; ways to obtain relief from platting, design, or permitting requirements while achieving a similar or better stormwater management level of service; and selected project financial information.

This form is designed to collect detailed project-specific information in an anonymous format. Please do not include any company or project information (such as the address or proper name) that would reveal confidential business information.

1. Project Characteristics:

1.1. Project Type? Circle One (or both, if you develop both types of projects):

1.1.1. Development

1.1.2. Redevelopment

1.2. Product Type? Circle One:

1.2.1. Single Family Residential

1.2.2. Multi-Family Residential

1.2.3. Low Rise Commercial

1.2.4. Mid Rise Commercial

1.2.5. Industrial

1.2.6. Low Rise Office

1.2.7. Mid Rise Office

1.2.8. High Rise Office

1.2.9. Other (Specify): ____________________________________________
1.3. Business Model:

1.3.1. Lease Income?

1.3.2. Sale Proceeds?

1.3.3. Rental Income?

1.3.4. Other (Specify): ______________________________

1.4. Marketing / Target Customer:

1.4.1. What is the demographics of this project’s target individual customer (if applicable)?
Age, general, life stage, etc.

1.4.2. What are the main characteristics of this project’s target business customer (if applicable)? Business size, employee count, business type, planned property uses, etc.

1.4.3. What aspects of your project do you emphasize when marketing to your target customers?

1.4.4. Would nature, environmental conservation, open space, and sustainability resonate with this project’s target customers? If so how, if not why not?

1.5. Ownership Plan:

1.5.1. Hold

1.5.2. Sell

1.5.3. Other (Specify): ______________________________

2. Property Characteristics

2.1. Total Lot Size?

2.2. Area of Construction Disturbance?
2.3. Finished Building Height?

2.4. Finished Interior (non-parking) Area?

2.5. Parking Area Type (Offsite Street, Onsite Surface, Onsite Belowground Garage or Onsite Aboveground Garage)?

2.6. Parking Area Size?

2.7. Landscaped Area Size?

3. Project Timing

3.1. Duration of feasibility study period?

3.2. Duration of design?

3.3. Duration of platting process?

3.4. Duration of permitting process?

3.5. Any specific concerns about City of Houston process durations?

3.6. How much time savings would be sufficient to motivate you to use green infrastructure techniques?

4. Project Financials

4.1. Pre-Project Costs:

4.1.1. Appraised value?

4.1.2. Property tax?

4.1.3. Landscape Maintenance Costs? ($/sf/year)

4.1.4. Drainage Fee?

4.2. Project Costs:

4.2.1. Construction Costs?

4.2.1.1. Site Work, Excavation, Paving, Foundations, Parking

4.2.1.2. Water, Sewer, Dry Utilities
4.2.1.3. Building Envelope?

4.2.1.4. Onsite Storm Sewer?

4.2.1.5. Stormwater Quality?

4.2.1.6. Detention?

4.2.1.7. Rainwater Harvesting?

4.2.1.8. Mechanical, Electrical, Plumbing?

4.2.1.9. Furnishings and Finishes?

4.2.1.10. Other?

4.2.2. Lease, Sale, or Rental Costs?

4.2.3. Permitting, platting, licensing, or other City fees?

4.3. Post-Project Costs:

4.3.1. Appraised value?

4.3.2. Property tax?

4.3.3. Landscape Maintenance Costs? ($/sf/year)

4.3.4. Drainage Fee?

5. Parking Requirements (Chapter 26)

5.1. What concerns about the parking arose on this project?

5.2. What impediments do you see with current parking requirements that discourage you to use green stormwater infrastructure?

5.3. What opportunities do you see for changes to parking requirements that would encourage you to use green stormwater infrastructure?
6. Tree and shrub requirements (Chapter 33, Articles V and VI).
   6.1. What concerns about the trees and shrubs arose on this project?

   6.2. What impediments do you see with current trees and shrubs requirements that discourage you to use green stormwater infrastructure?

   6.3. What opportunities do you see for changes to trees and shrubs requirements that would encourage you to use green stormwater infrastructure?

7. Alleys (Chapter 40, Article XV).
   7.1. What concerns about the alleys arose on this project?

   7.2. What impediments do you see with current alley requirements that discourage you to use green stormwater infrastructure?

   7.3. What opportunities do you see for changes to alley requirements that would encourage you to use green stormwater infrastructure?

8. Use of Public right of way (Chapter 40, Article XXI).
   8.1. What concerns about the right of way use arose on this project?

   8.2. What impediments do you see with current right of way use provisions that discourage you to use green stormwater infrastructure?

   8.3. What opportunities do you see for changes to right of way use provisions that would encourage you to use green stormwater infrastructure?
9. Streets and Driveways (Chapter 42, Division 2).

9.1. What concerns about the streets and driveway provisions arose on this project?

9.2. What impediments do you see with current streets and driveway provisions that discourage you to use green stormwater infrastructure?

9.3. What opportunities do you see for changes to streets and driveway provisions that would encourage you to use green stormwater infrastructure?

10. Building Line Requirements (Chapter 42, Division 3).

10.1. What concerns about the building lines arose on this project?

10.2. What impediments do you see with current building lines requirements that discourage you to use green stormwater infrastructure?

10.3. What opportunities do you see for changes to building lines requirements that would encourage you to use green stormwater infrastructure?

11. Lots and Reserves (Chapter 42, Division 4).

11.1. What concerns about the lots and reserves arose on this project?
11.2. What impediments do you see with current lots and reserves requirements that discourage you to use green stormwater infrastructure?

11.3. What opportunities do you see for changes to lots and reserves requirements that would encourage you to use green stormwater infrastructure?

12. Multi-Family Residential Platting (Chapter 42, Division 6).

12.1. What concerns about the MF platting arose on this project?

12.2. What impediments do you see with current MF platting requirements that discourage you to use green stormwater infrastructure?

12.3. What opportunities do you see for changes to MF platting requirements that would encourage you to use green stormwater infrastructure?

13. Residential Buffers Platting (Chapter 42, Division 8).

13.1. What concerns about the buffers arose on this project?

13.2. What impediments do you see with current buffer requirements that discourage you to use green stormwater infrastructure?

13.3. What opportunities do you see for changes to buffer requirements that would encourage you to use green stormwater infrastructure?
14. Stormwater Information

14.1. Elevation of Nearest 1% Annual Chance Floodplain?

14.2. Post-Project Lowest Finished Floor Elevation?

14.3. Area of Pre-Project Imperviousness?

14.4. Area of Post-Project Imperviousness?

14.5. Volume of Detention Provided?

14.6. Stormwater Quality Facility Provided?

14.7. What concerns about the stormwater management arose on this project?

14.8. What impediments do you see with current drainage and stormwater quality design requirements that discourage you to use green stormwater infrastructure?

14.9. What opportunities do you see for changes to current drainage and stormwater quality design requirements that would encourage you to use green stormwater infrastructure?

14.10. Do drainage or flooding issues hinder the success of your project? If so, please describe how:

15. Building Code Concerns and Opportunities:

15.1. What concerns about the applicable building codes arose on this project?

15.2. What impediments do you see with current building codes that discourage you to use green stormwater infrastructure?
15.3. What opportunities do you see for changes to current building codes that would encourage you to use green stormwater infrastructure?

16. Key Terms or Provisions of Any Agreements with Public Agency Partners

16.1. How could your agreement with the city be modified to incentivize you to use green infrastructure?

17. Other Incentive Ideas?

17.1. What have you seen in other cities?

17.2. What other ideas do you have?