

**JOINT MEETING OF THE RTP AND TIP SUBCOMMITTEES  
HOUSTON-GALVESTON AREA COUNCIL  
3555 TIMMONS LANE, 2<sup>ND</sup> FLOOR CONFERENCE ROOM B/C  
February 7, 2018  
1:30 p.m.**

**AGENDA**

1. Introductions
2. Adoption of Agenda

**INFORMATION**

**3. Investment Priorities**

*Staff will provide an update on the Investment Priority Matrix including Draft Scoring Criteria for Investment Categories. The Matrix is intended to identify regional priorities for the next RTP and TIP Call for Projects.*

**4. 2018 Call for Projects Tentative Schedule**

**5. TIP & RTP 2018 Meetings Schedule**

**6. Announcements**

- TAC Meeting – February 14, 2018, 9:30 a.m., Conf. Room B/C
- TPC meeting – February 23, 2018, 9:30 a.m., Room B
- Next TIP Meeting – March 7, 2018, 1:30 p.m., Conf. Room B/C

**7. Adjourn**

## 2045 RTP Investment Strategies

### Background

Staff Continues to revise the 2045 RTP Draft Investment Priority Matrix, and Investment Category evaluation criteria.

At the November 29, 2017 meeting staff reviewed adjustments to the draft Investment Priority Matrix and discussed three approaches to address H-GAC's participation in future project cost overruns as shown below.

- Current Practice: Based on TPC review and approval (generally 50/50)
- Proposed: No cost overrun participation
- Alternative: Participation at original rate (80/20) based on funding availability

Based on further discussions with the relevant TAC members, staff proposes to continue current practice. This change is reflected in the attached evaluation criteria worksheets.

At the December 2017 TAC and TPC meeting staff reviewed the draft Investment Priority Matrix. A summary of the comments provided during the meeting is as follows:

- Importance of freight to the state and regional economy and the critical role transportation system plays in moving freight from, to and through the region
- Importance of Infrastructure Resiliency to the region
- Importance of addressing regional traffic congestion in the RTP
- Need for interjurisdictional connectivity between transit systems

Based on the discussion at the meeting, staff has made the following adjustments to the Investment Priorities Matrix.

- Modified the matrix into three tables, one for each investment strategy (Manage, Maintain, and Expand)
- Each strategy table list related investment categories and identifies their direct and related intermodal improvements to the infrastructure
- Included Air Quality and Planning Investment Areas

These adjustments are reflected in Attachment A.

### **Action Requested**

Information only

**2045 RTP Investment Strategies**

**Major Investments (>\$100 million)**

Consider individual contribution of major capital investments exceeding \$100 million toward achievement of RTP Goals and Strategies.

**Other Investments (<\$100 million)**

Provide priority direction to other investments to ensure alignment with RTP Strategies (TABLES BELOW):

Investment Categories	RTP Strategy - Manage					
	Transportation Mode				Air Quality	Planning
	Highways	Freight	Transit	Active Transportation (Bike/Ped)		
Access Management & Safety	●	●	●	●	◐	
Highway Grade Separations	●	●			◐	
ITS Infrastructure	●	●			◐	
Transit Infrastructure Priority	●		●		◐	
Bike/Ped "First Mile/Last Mile"			●	●		
Transit Regional Fare Collection			●			
Autonomous Vehicle/Connected Vehicle	●	●	●			
Carpool/Vanpool					●	
Clean Air Action					●	
Safety Planning						●

● Direct Improvements

◐ Related Improvements

Investment Categories	RTP Strategy - Maintain					
	Transportation Mode				Air Quality	Planning
	Highways	Freight	Transit	Active Transportation (Bike/Ped)		
Reconstruction/ Rehabilitation (Highways, Bridges, and Intermodal Connectors)	●	●	●			
Transit Facility State of Good Repair			●	●		
Vehicle Replacement/Overhaul		●	●		●	
ADA Compliance			●	●		
Infrastructure Resiliency	●	●				

● Direct Improvements

○ Related Improvements

DRAFT

Investment Categories	RTP Strategy - Expand					
	Transportation Mode				Air Quality	Planning
	Highways	Freight	Transit	Active Transportation (Bike/Ped)		
Interjurisdictional Connectivity/Barrier Elimination	●	●	●	●		
Roadway Added Capacity (New Construction/Widening/Complete Streets)	●	●	●	●		
Innovative Freight Movement		●			◐	
Transit Passenger Facilities			●		◐	
Transit Fleet Expansion			●		◐	
Alternative Fuel Infrastructure					●	
Sub-regional/Multimodal Planning/Livable Cities Initiative						●

- Direct Improvements
- ◐ Related Improvements

**Investment Category:** Access Management & Safety [MANAGE]

**Category Description/Objective:** Improve thoroughfare safety and operational efficiency through the application of access management treatments.

**Typical Projects:**

- Driveway consolidation/elimination/relocation, raised medians, dedicated turn lanes, roundabouts/innovative intersections, road diet/reconfiguration, associated reasonable ped/bike accommodations, and improvements to circulation and connectivity between land uses along major thoroughfares.

**Base Funding Participation/Match:** 80/20

**Benefit/Cost Analysis Measure(s):** [Safety Benefits (\$) + Delay Reductions (PHED) (\$)]/Funding Needed

**Weight and/or Minimum Ratio:** 50%/1.0 (benefits exceed costs)

<b>Planning Factors: 40%</b>	<b>Max</b>
Roadway Hierarchy (Design Class or Design Volumes)	10
Freight System Priority/Evacuation Route	20
Connectivity to Other Modes (Multimodal LOS)	25
Corridor Travel Time Reliability (LOTTR)	25
Planning Coordination	5
Funding Match Greater than 50 %	10
Environmental Justice	5
<b>Total</b>	<b>100</b>

<b>Project Specific Planning Factor: 10%</b>	<b>Max</b>
Emissions Reductions (NOX, VOC)	5
Corridor Provides Access to Major Employment or Activity Center	5

**Investment Category:** Highway Grade Separations [MANAGE]

**Category Description/Objective:** Improve thoroughfare safety and operational efficiency through the application of interchange and grade separation treatments.

**Typical Projects:**

- Direct connectors, grade separations, associated intersection and reasonable ped/bike accommodations

**Base Funding Participation/Match:** 80/20

**Benefit/Cost Analysis Measure(s):** [Safety Benefits (\$) + Delay Reductions (PHED) (\$)]/Funding Needed

**Weight and/or Minimum Ratio:** 50%/1.0 (benefits exceed costs)

<b>Planning Factors: 40%</b>	<b>Max</b>
Roadway Hierarchy (Design Class or Design Volumes)	10
Freight System Priority/Evacuation Route	20
Connectivity to Other Modes (Multimodal LOS)	25
Corridor Travel Time Reliability (LOTTR)	25
Planning Coordination	5
Funding Match Greater than 50 %	10
Environmental Justice	5
<b>Total</b>	<b>100</b>

<b>Project Specific Planning Factor: 10%</b>	<b>Max</b>
Eliminates at grade Railroad Crossing	10

**Investment Category:** Regional ITS Infrastructure [MANAGE]

**Category Description/Objective:** Improve transportation operational efficiency through the deployment and expansion of regional ITS infrastructure.

**Typical Projects:**

- Regional communications (connectivity with TranStar, interagency redundancy, etc), traveler information systems (dynamic message signage, warning systems, real-time transit vehicle location/next-bus arrival, active parking management), active traffic management/dynamic facility management (automated ramp/gate operations, signage, etc)

**Base Funding Participation/Match:** 80/20

**Benefit/Cost Analysis Measure(s):** [Safety Benefits (\$) + Delay Reductions (PHED) (\$)]/Funding Needed

**Weight and/or Minimum Ratio:** 50%/1.0

<b>Planning Factors: 40%</b>	<b>Max</b>
Incident/Event Management	20
Interagency Coordination	20
Continuity of Operations	15
Corridor Travel Time Reliability (LOTTR)	25
Life Cycle Maintenance	10
Funding Match Greater than 50 %	10
<b>Total</b>	<b>100</b>

<b>Project Specific Planning Factor: 10%</b>	<b>Max</b>
Emissions Reductions (NOX, VOC)	5
System can be integrated with other existing ITS system in the region	5



**Investment Category:** Transit Priority Infrastructure [MANAGE]

**Category Description/Objective:** Improve operational efficiency of transit services within H-GAC's 8-county planning area by prioritizing the movement of transit vehicles within mixed traffic.

**Typical Projects:**

- Bus pullouts, queue jump lanes, stop consolidation, ITS systems (detection, controllers, communications), signage

**Base Funding Participation/Match:** 80/20 (TDC eligible)

**Benefit/Cost Analysis Measure(s):** Transit Passenger Delay

**Weight and/or Minimum Ratio:** 50%/1.0 (benefit must exceed costs)

<b>Planning Factors: 50%</b>	<b>Max</b>
Frequency of Transit Service	20
Connectivity to Other Transit Routes	15
Connectivity to Ped/bike	15
Connectivity to Activity Center (Employment Center/School/Medical Facility, e.t.c.)	30
Environmental Justice	10
Planning Coordination	5
Funding Leverage	5
<b>Total</b>	<b>100</b>

**Investment Category:** Active Transportation “First Mile/Last Mile Connectivity [MANAGE]

**Category Description/Objective:** Increase utilization of existing transit services and active modes of transportation through direct pedestrian and bicycle connections to priority destinations/services.

**Typical Projects:**

- New and widened sidewalks/multi-use trails/protected bicycle facilities, bicycle station infrastructure, pedestrian amenities and necessary utilities (lighting/landscaping/furniture/etc, capped at 25% of funding request)

**Base Funding Participation/Match:** 80/20

**Benefit/Cost Analysis Measure(s):** Cost Effectiveness (Cost \$/Estimated VMT Reduced)

**Weight:** 50%

<b>Planning Factors: 50%</b>	<b>Max</b>
Safety	20
Barrier Elimination	15
Connectivity to Transit	15
Connectivity to Activity Center (Employment Center/School/Medical Facility, e.t.c.)	30
Environmental Justice	10
Planning Coordination	5
Funding Leverage	5
<b>Total</b>	<b>100</b>

**Investment Category:** Regional Transit Fare Collection [MANAGE]

**Category Description/Objective:** Provide federal funding assistance to achieve regional coordination of fare collection and fare structure among providers of public transportation within H-GAC's 8-county planning area.

**Selection Process:** Future, Collaborative Planning Process

**Typical Projects:**

- Planning associated with creation of a Regional Fare Collection Plan
- Implementation of Regional Fare Collection Plan recommendations

**Base Funding Participation/Match:** 100%/0% (TDCs)

**Minimum/Maximum Funding per Project:** TBD

- PROPOSED: \$5 million available for implementation of coordinated/consolidated fare payment platform
- PROPOSED: \$5 million available for implementation of regional fare structure

**Benefit/Cost Analysis Measure(s):** TBD, result of planning process

**Weight or Minimum Ratio:** N/A

**Investment Category:** Autonomous and Connected Vehicle Infrastructure [MANAGE]

**Category Description/Objective:** Support the broad deployment of autonomous and connected vehicles through implementation of eligible construction and technology equipment investments.

**Selection Process:** Future, Collaborative Planning Process

**Typical Projects:**

- Planning associated with a Regional AV/CV Plan
- Implementation of Regional AV/CV Plan

**Base Funding Participation/Match:** TBD

**Minimum/Maximum Funding per Project:** TBD

- PROPOSED: \$20 million available for implementation in the FY 2019-2022 TIP timeframe
- PROPOSED: \$25 million available for implementation in the FY 2023-2027 timeframe

**Benefit/Cost Analysis Measure(s):** TBD, result of planning process

**Weight and/or Minimum Ratio:** N/A

**Other Evaluation Criteria:** TBD, result of planning process

**Weight and/or Minimum Score:** N/A

**Investment Category:** Rehabilitation/Reconstruction [MAINTAIN]

**Category Description/Objective:** Improve state of good repair and operational efficiency of the network through major rehabilitation and reconstruction. Including intermodal connectors (“First Mile/Last Mile” Freight projects)

**Typical Projects:**

- Major rehabilitation and reconstruction of roadway pavements and structures including bridges, including reasonable pedestrian/bicycle/transit accommodations and drainage improvements related to the roadway impervious surface only.
- Jurisdictions must have adopted asset management plan that demonstrates how preservation/preventive maintenance strategies are being utilized to extend the useful life of roadway infrastructure and reduce the need for major rehabilitation or reconstruction.

**Base Funding Participation/Match:** 50/50

**Benefit/Cost Analysis Measure(s):** 20-year Life-Cycle Cost Analysis (LCCA)

**Weight and/or Minimum Ratio:** 50%/1.0 (benefits exceed costs)

<b>Planning Factors: 40%</b>	<b>Max</b>
Roadway Hierarchy	10
Freight System Priority/Evacuation Route	20
Connectivity to Other Modes (Multimodal LOS)	25
Corridor Travel Time Reliability (LOTTR)	25
Planning Coordination	5
Funding Leverage	10
Environmental Justice	5
<b>Total</b>	<b>100</b>

<b>Project Specific Planning Factor: 10%</b>	<b>Max</b>
Improves Safety	10

**Investment Category:** Transit Facility State of Good Repair [MAINTAIN]

**Category Description/Objective:** Improve the safety and operational efficiency of transit services within H-GAC's 8-county planning area by supporting the replacement or overhaul of transit passenger and vehicle maintenance facilities that have exceeded their Useful Life Benchmark (ULB) and construction of new transit maintenance facilities, consistent with each transit provider's adopted Transit Asset Management Plan (TAMP) and performance targets.

**Typical Projects:**

- Major rehabilitation and reconstruction of transit passenger facilities including Park & Rides/Pool, Multi-route transfer points/Super Stops, Shelters
- Construction, major rehabilitation and reconstruction of vehicle maintenance facilities
- Costs allocable to other functions are not eligible (e.g. administration, emergency operations, etc.)

**Base Funding Participation/Match:** 50/50 (provider must explain how they are utilizing FTA allocations, provider may use other federal funds to increase federal participation)

**Benefit/Cost Analysis Measure(s):** Cost Effectiveness (Cost \$/Annual PMT)

**Weight and/or Minimum Ratio:** 50%/1.0

<b>Planning Factors: 50%</b>	<b>Max</b>
Years Beyond Useful Life	10
Planning Coordination	15
Provides Interjurisdictional Connectivity	20
Ridership Plan (Expected Ridership Growth)	10
Provides Connection to Other Transit Services (Fixed Route/Commuter/Rail/Demand Response/etc)	10
Provides Safe ped/bike accommodations	10
Includes Facility Maintenance Strategies	10
Environmental Justice	10
Funding Leverage	5
<b>Total</b>	<b>100</b>

**Investment Category:** Transit Vehicle Replacement/Overhaul [MAINTAIN]

**Category Description/Objective:** Improve the safety and operational efficiency of transit services within H-GAC's 8-county planning area by supporting the replacement or overhaul of revenue transit vehicles that have exceeded their Useful Life Benchmark (ULB), consistent with each transit provider's adopted Transit Asset Management Plan (TAMP) and performance targets.

**Eligible Projects and Costs:**

- Revenue vehicle replacement purchase (must be same type/size)

**Base Funding Participation/Match:** 50/50 (provider must explain how they are utilizing FTA allocations)

**Benefit/Cost Analysis Measure(s):** Cost Effectiveness (Cost \$/Annual Vehicle PMT)

**Weight and/or Minimum Ratio:** 50%

**Other Evaluation Criteria:** Years beyond ULB (FTA guidance is minimum, must be >0), Emissions Reductions

**Weight and/or Minimum Score:** 50%

**Investment Category:** Active Transportation ADA Compliance [MAINTAIN]

**Category Description/Objective:** Improve accessibility of the pedestrian network by upgrading existing facilities and constructing new ADA-compliant pedestrian facilities.

**Eligible Projects and Costs:**

- ADA-compliant pedestrian facilities such as sidewalks, curb ramps, tactile detectors, pedestrian signals, etc.
- Improvements must be identified within a jurisdiction's adopted ADA self-evaluation or transition plan.

**Base Funding Participation/Match:** 50/50

**Benefit/Cost Analysis Measure(s):** Cost Effectiveness (Cost/Estimated # of Users)

**Weight:** 50%

<b>Planning Factors: 50%</b>	<b>Max</b>
Safety	20
Barrier Elimination	15
Connectivity to Transit	15
Connectivity to Activity Center (Employment Center/School/Medical Facility, e.t.c.)	30
Environmental Justice	10
Planning Coordination	5
Funding Leverage	5
<b>Total</b>	<b>100</b>



**Investment Category:** Infrastructure Resiliency [MAINTAIN]

**Category Description/Objective:** Address vulnerabilities of highways and regional thoroughfares to extreme weather, sea level change and changes in environmental conditions through implementation of eligible construction investments.

**Selection Process:** Future, Collaborative Planning Process

**Typical Projects:**

- Planning associated with a Regional Transportation Resiliency Plan
- Implementation of Regional Transportation Resiliency Plan
  - Example: roadway elevation or hardening on corridors that have required multiple emergency repairs, experience regular inundation, and/or are critical to evacuation plans.

**Base Funding Participation/Match:** TBD

**Minimum/Maximum Funding per Project:** TBD

- PROPOSED: \$20 million available for implementation in the FY 2019-2022 TIP timeframe
- PROPOSED: \$25 million available for implementation in the FY 2023-2027 timeframe

**Benefit/Cost Analysis Measure(s):** TBD, result of planning process

**Weight and/or Minimum Ratio:** N/A

**Other Evaluation Criteria:** TBD, result of planning process

**Investment Category:** Interjurisdictional Connectivity [EXPAND]

**Category Description/Objective:** Improve accessibility and mobility of people and goods through enhanced roadway connectivity between local jurisdictions.

**Typical Projects:**

- Construction of roadway pavements and structures including bridges, reasonable pedestrian/bicycle/transit accommodations and drainage improvements related to the roadway impervious surface only.
- Roadway segments up to 2 miles in length.
- Projects must be consistent with H-GAC's congestion management process.
- Jurisdictions must have adopted asset management plan that demonstrates how preservation/preventive maintenance strategies are being utilized to extend the useful life of roadway infrastructure and reduce the need for major rehabilitation or reconstruction.

**Base Funding Participation/Match:** 80/20

**Benefit/Cost Analysis Measure(s):** [Delay (PHED) Reduced in \$]/Funding Needed

**Weight and/or Minimum Ratio:** 50%/1.0

<b>Other Evaluation Criteria 50%</b>	<b>Max</b>
Barrier Elimination	15
Potential for VMT Reductions on Parallel Route	20
Connectivity to Other Modes (Multimodal LOS)	25
Connectivity to Existing Freight System (Freight Generator)	20
Planning Coordination	5
Funding Leverage	10
Environmental Justice	5
<b>Total</b>	<b>100</b>

<b>Project Specific Planning Factor: 10%</b>	<b>Max</b>
Includes Safety Control Measures	10

**Investment Category:** Roadway Added Capacity (New Construction/Widening/Complete Streets) [EXPAND]

**Category Description/Objective:** Improve accessibility and mobility of people and goods on the regional thoroughfare network through the addition of roadway capacity.

**Typical Projects:**

- Widening and reconstruction of roadway pavements and structures including bridges, including reasonable pedestrian/bicycle/transit accommodations and drainage improvements related to the roadway impervious surface only.
- Projects must be consistent with H-GAC's congestion management process.
- Jurisdictions must have adopted asset management plan that demonstrates how preservation/preventive maintenance strategies are being utilized to extend the useful life of roadway infrastructure and reduce the need for major rehabilitation or reconstruction.

**Base Funding Participation/Match:** 80/20

**Benefit/Cost Analysis Measure(s):** Safety + Delay (PHED)

**Weight and/or Minimum Ratio:** 50%/1.0 (benefits exceed costs)

<b>Planning Factors: 40%</b>	<b>Max</b>
Roadway Hierarchy	10
Freight System Priority/Evacuation Route	20
Connectivity to Other Modes (Multimodal LOS)	25
Corridor Travel Time Reliability (LOTTR)	25
Planning Coordination	5
Funding Leverage	10
Environmental Justice	5
<b>Total</b>	<b>100</b>

<b>Project Specific Planning Factor: 10%</b>	<b>Max</b>
Corridor Provides Access to Major Employment or Activity Center	10

**Investment Category:** Innovative Freight Movement [EXPAND]

**Category Description/Objective:** Improve transportation safety and operational efficiency through the deployment of innovative intermodal freight transfer technologies.

**Selection Process:** Future, Collaborative Planning Process

**Typical Projects:**

- Capital equipment and installation/construction costs
- Intermodal transfer equipment

**Base Funding Participation/Match:** 50/50

**Benefit/Cost Analysis Measure(s):** [Safety Benefits (\$) + Delay Reductions (PHED) (\$)]/Funding Needed

**Weight:** 50%

<b>Other Evaluation Criteria (Subject to change) 40%</b>	<b>Max</b>
Planning Coordination (Consistent with Regional Goods Movement Plan or Texas Freight Mobility Plan or Ports Area Mobility Study)	20
Autonomous/Connected Vehicle Technology	10
Connectivity to Regional Freight System	20
Includes Economic Impact Analysis	20
Includes Life Cycle Maintenance Plan (Y/N)	20
Public Private Partnership	10
<b>Total</b>	<b>100</b>

<b>Project Specific Planning Factor: 10%</b>	<b>Max</b>
Annual Heavy Cargo Movement (Tonnage)	10

**Investment Category:** Transit Passenger Facilities [EXPAND]

**Category Description/Objective:** Increase transit usage within H-GAC's 8-county planning area by supporting the construction of new or expanded passenger facilities.

**Typical Projects:**

- New or Expanded Park & Rides/Pool, Multi-route transfer points/Super Stops, Shelters

**Base Funding Participation/Match:** 80/20 (TDC Eligible, provider must explain how they are utilizing FTA allocations)

**Benefit/Cost Analysis Measure(s):** Cost Effectiveness (Annualized \$/Estimated VMT Reduced)

**Weight and/or Minimum Ratio:** 50%

<b>Planning Factors: 50%</b>	<b>Max</b>
Planning Coordination	15
Provides Interjurisdictional Connectivity	20
Ridership Plan (Expected Ridership)	10
Provides Connection to Other Transit Services (Fixed Route/Commuter/Rail/Demand Response/etc)	10
Provides Safe ped/bike accommodations	10
Project Part of Transit Oriented Development	10
Includes Facility Maintenance Strategies	10
Environmental Justice	10
Funding Leverage	5
<b>Total</b>	<b>100</b>

**Investment Category:** Transit Fleet Expansion [EXPAND]

**Category Description/Objective:** Increase transit usage within H-GAC's 8-county planning area by supporting the purchase of additional revenue vehicles for transit providers demonstrating ridership growth, as documented in reporting to FTA's National Transit Database (NTD).

**Typical Projects:**

- Revenue vehicle purchase

**Base Funding Participation/Match:** 80/20 (TDC Eligible, provider must provide a plan describing how they plan to utilize FTA funding allocations)

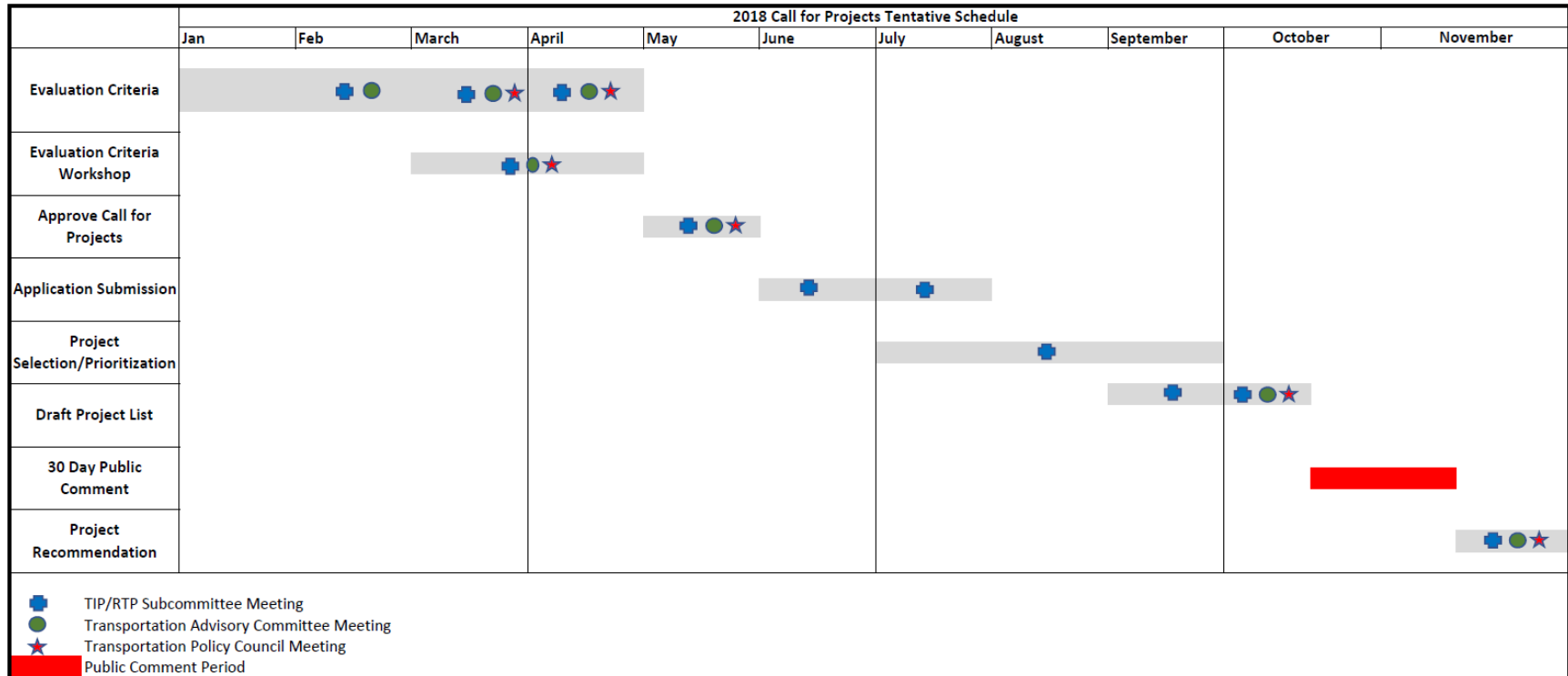
**Benefit/Cost Analysis Measure(s):** Cost Effectiveness (Annualized Cost/Current PMT Growth for service type)

**Weight and/or Minimum Ratio:** 50%

**Other Evaluation Criteria:** Current Unlinked Trips per vehicle for service type, Potential Increase in Ridership

**Weight and/or Minimum Score:** 50%

2018 Call for Projects Schedule



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## TIP & RTP SUBCOMMITTEES

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### 2018 MEETING SCHEDULE

Houston-Galveston Area Council of Government  
3555 Timmons Lane, Suite 120, Houston, Texas 77027

(Meetings Held – Second Floor, Agency Conference Room 2-B at 9:30 A.M. or 1:30P.M. as indicated)

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<b>Month</b>	<b>TIP Subcommittee</b>	<b>RTP Subcommittee</b>
January 2018	<b>CANCELLED</b>	n/a
February 2018	1:30p Wed Feb 7 (JOINT MTG)	
March 2018	1:30p Wed, Mar 7	n/a
April 2018	9:30a Wed, Apr 11	1:30p Wed, Apr 4
May 2018	9:30a Wed, May 9	n/a
June 2018	1:30p Wed, Jun 6 (JOINT MTG)	
July 2018	9:30a Wed, Jul 11	n/a
August 2018	9:30a Wed, Aug 8	1:30p Wed, Aug 1
September 2018	9:30a Wed, Sep 12	n/a
October 2018	1:30p Wed, Oct 3 (JOINT MTG)	
November 2018	1:30p Wed, Nov 7	n/a
December 2018	n/a	1:30p Wed, Dec 5