VTA's BART SILICON VALLEY

PHASE II EXTENSION PROJECT

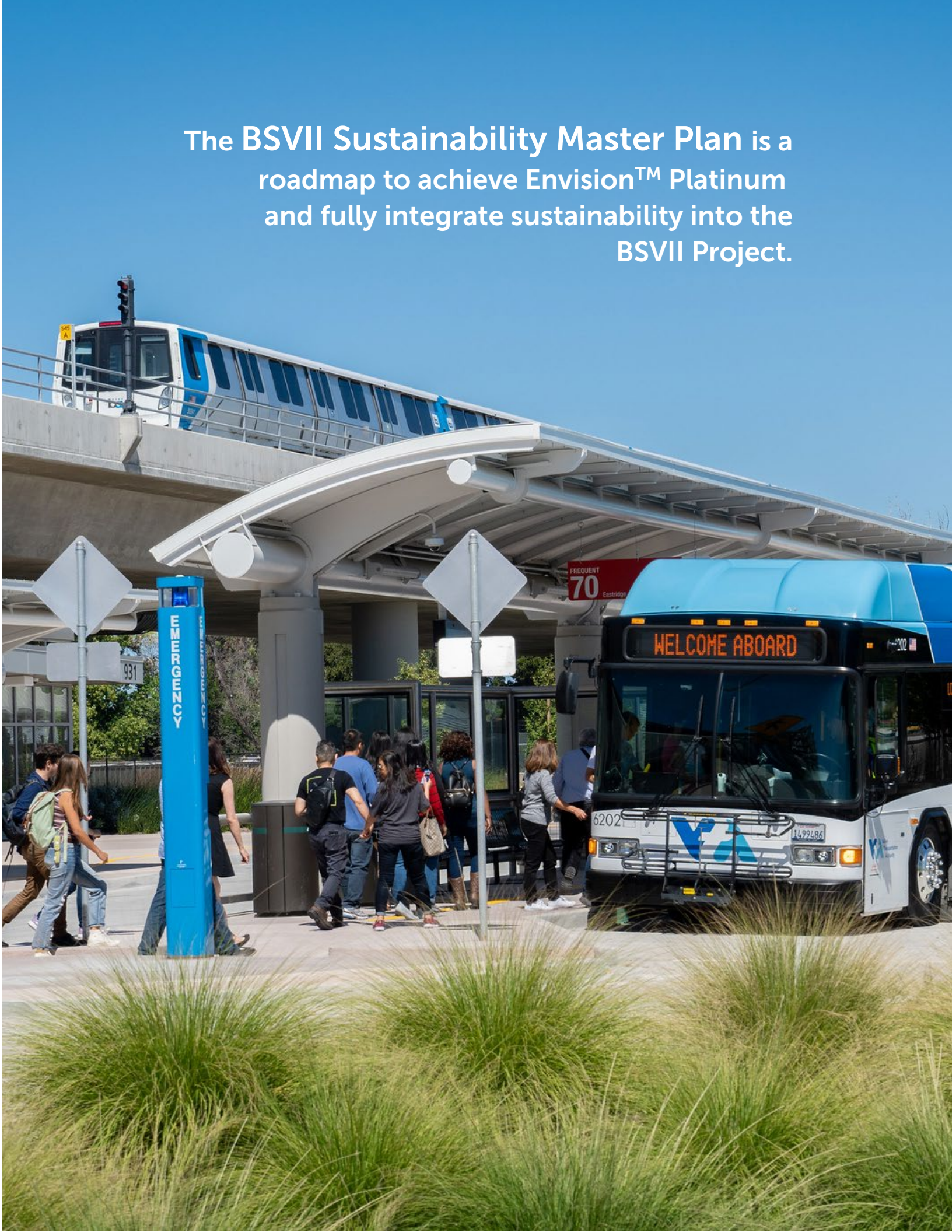
Sustainability Master Plan

Managing VTA's Sustainability Commitment

July 2021

Valley Transportation Authority

The **BSVII Sustainability Master Plan** is a roadmap to achieve Envision™ Platinum and fully integrate sustainability into the BSVII Project.



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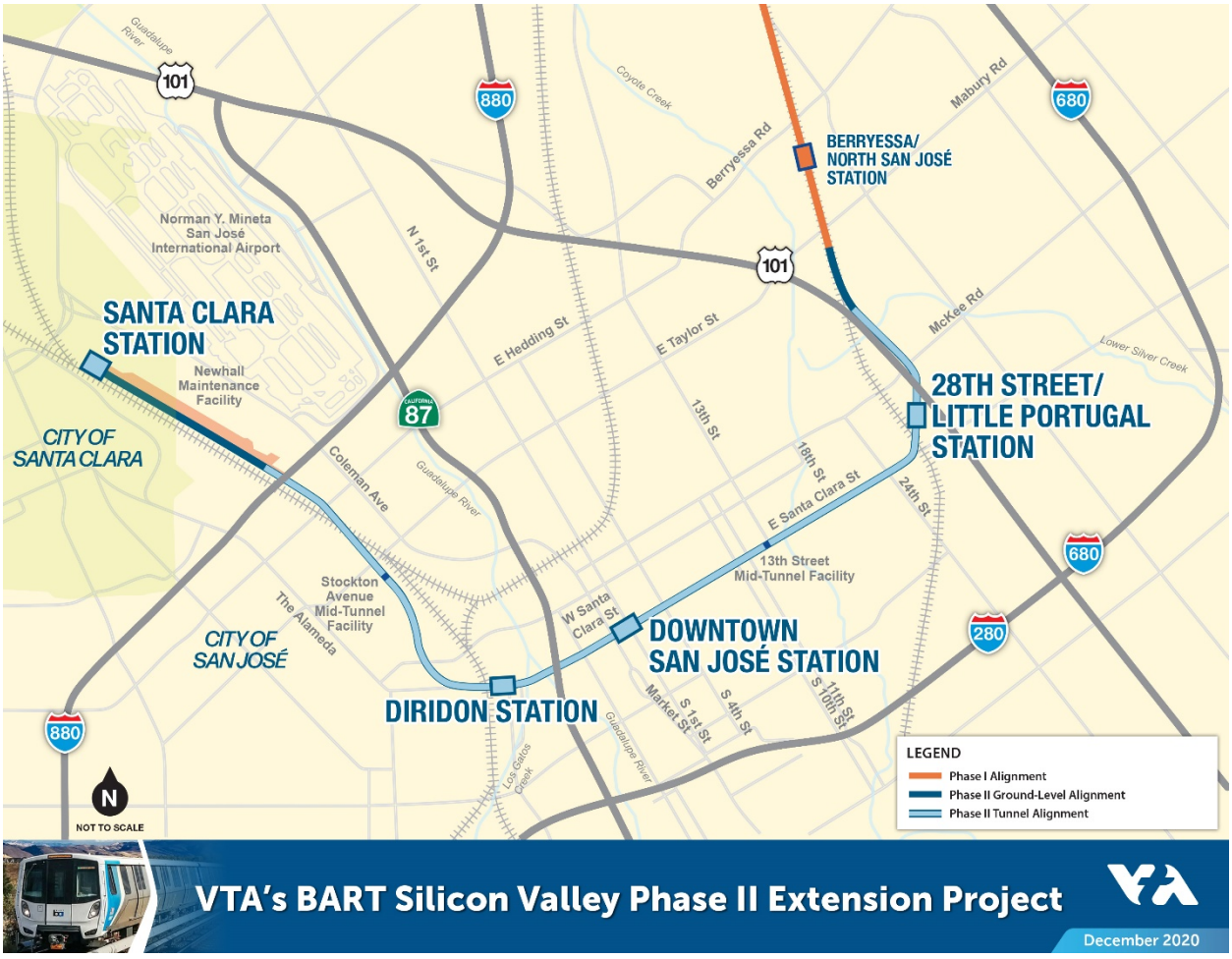
Pedestrian bridge at Milpitas Transit Center

1 Introduction

1.1 Project Overview

VTA's BART Silicon Valley Phase II Extension Project (BSVII Project) is a six-mile, four-station extension of the regional BART commuter rail system beginning at the recently opened Berryessa/North San José Station, extending through downtown San José to the City of Santa Clara. The BSVII Project includes an approximately five-mile, approximate 48-foot exterior diameter single-bore tunnel, three underground stations (28th Street/Little Portugal, Downtown San José, and Diridon), one at-grade station (Santa Clara), two mid-tunnel facilities, and a maintenance and storage yard.



1.2 Background

1.2.1 Sustainability at VTA

Sustainability commitments are confirmed in VTA's values, mission, policies, and actions.

1.2.1.1 Values

VTA's Core Values include sustainability, safety, integrity, quality, diversity, and accountability. Sustainability is defined as development that meets the needs of the present without compromising the ability of future generations to meet their own needs.

1.2.1.2 Mission

As a transportation agency, sustainability is integral to everything VTA does from providing accessible, community-focused, and innovative transportation solutions, to operating services and designing projects in an environmentally friendly way.

1.2.1.3 Policies

Several VTA policies promote sustainability efforts including transit-oriented development, complete streets, environmental preferrable purchasing, landscaping, and green building.

1.2.1.4 Actions

VTA has a long legacy of championing sustainability. Notable actions and accomplishments achieved to date include the following:

- The Sustainability Program was approved by VTA's Board of Directors in 2008 with the goal "to strengthen VTA's commitment to the environment by reducing the consumption of natural resources, the creation of greenhouse gases, and the generation of pollution in the provision of public transportation services."
- In 2009, VTA became a founding signatory to the American Public Transportation Association's (APTA) Sustainability Commitment and earned gold-level recognition from APTA in 2016.
- In 2020, VTA adopted a resolution that formally declared a climate emergency and directed the agency to evaluate administrative procedures, develop sustainability metrics and a Climate Action Plan, support legislative efforts to avert climate change, and join with stakeholders to reduce greenhouse gas (GHG) emissions in the transportation sector.
- Also in 2020, VTA prepared an agency-wide Sustainability Plan that outlined key performance indicators with short-term and stretch targets for GHG emissions, criteria air pollutants, building energy, fleet energy, water usage, and waste diversion. The VTA 2020 Sustainability Plan serves as a roadmap to guide VTA's actions through Fiscal Year 2040.
- In 2021, VTA's Berryessa Transit Center was awarded the Envision™ Platinum Award. To earn this prestigious award, projects must demonstrate sustainability through a third-party project verification process and a comprehensive independent peer-review process conducted and overseen by the by the Institute for Sustainable Infrastructure (ISI) a non-profit organization

founded by the American Public Works Association, the American Society of Civil Engineers, and the American Council of Engineering Companies.[1]

1.2.2 Sustainability in Our Region

VTA's vision for a more sustainable Silicon Valley is supported by local government agencies and partners. The County of Santa Clara's Sustainability Master Plan includes strategies and goals to reduce climate pollution, adapt to a changing global climate, enhance natural resources and the environment, and foster a prosperous and just economy. Both the City of San José and City of Santa Clara, in which the BSVII Project will be built and operated, have adopted policies and plans to support sustainability efforts. Climate Smart San José is a community wide initiative that sets goals for energy, water, transportation, and local jobs that align with the targets set forth in the international Paris Agreement.[2] The City of Santa Clara's Climate Action Plan identifies actions to reduce GHG emissions and enhance climate resiliency. BART's sustainability commitments are provided in its Sustainability Policy, Sustainability Action Plan, Wholesale Electricity Portfolio Policy, and Low Carbon Fuel Standard Policy.

[1] The Envision framework provides a flexible system of criteria and performance objectives to aid decision makers and help project teams identify sustainable approaches during planning, design, and construction that will continue throughout the project's operations and maintenance and end-of-life phases. For more information, see the ISI's website at https://sustainableinfrastructure.org/.

[2] The Paris Agreement is a legally binding international treaty on climate change that brings all nations into a common cause to achieve a climate neutral world by mid-century. It sets a long-term temperature goal to limit global warming to well below 2, preferably to 1.5 degrees Celsius, compared to pre-industrial levels.

2 Purpose of Sustainability Master Plan

The purpose of the BSVII Project Sustainability Master Plan (Plan) is to meet the following three objectives:

- Provide a roadmap for the BSVII Project to achieve Envision ™ Platinum based on the Sustainability Charter.
- Reaffirm sustainability commitments made during the environmental phase of the BSVII Project.
- Comply with the requirements of VTA's Green Building Policy.

Each of these objectives are described below.

2.1 Sustainability Charter

The BSVII Project is guided by the following Sustainability Charter:

> *We, the BSVII team and VTA, commit to design and deliver the BSVII Project in a manner that is environmentally, socially, and economically sustainable. To fulfill our commitment, we will design, construct, operate, and maintain the BSVII Project using the most cost-effective practices, providing the greatest environmental benefit, without adverse effects on the construction schedule or budget. Our delivery of the BSVII Project will:*
>
> - ***Provide a comfortable, healthy, and secure environment*** *for patrons and staff by maximizing safety and reliability, reflecting the local context, and promoting transit-oriented development that will help bring riders into the system.*
> - ***Integrate sustainable strategies*** *in the design and construction of the whole project.*
> - ***Reduce energy dependency*** *by minimizing nonrenewable energy consumption and employ renewable sources of energy.*
> - ***Protect, conserve, and enhance*** *natural resources.*
> - ***Reduce resource consumption*** *by using environmentally preferable products and recycling/reusing resources and materials.*
> - ***Support VTA's, BART's, and Santa Clara County's*** *sustainability missions.*
>
> *The BSVII Project will demonstrate exemplary achievement of these principles using the Institute for Sustainable Infrastructure's Envision™ standards and rating system.*

The Plan incorporates these high-level commitments into a roadmap that the BSVII Project can follow to achieve Envision™ Platinum from ISI. Achieving this goal requires that sustainability be fully integrated into the BSVII Project through top-down leadership and with implementation of the requirements described in this Plan throughout the design, construction, and operation phases.

2.2 Sustainability Commitments

During the environmental phase of the BSVII Project, a Supplemental Environmental Impact Statement/Subsequent Environmental Impact Report and Section 4(f) Evaluation (SEIS/SEIR) was prepared (February 2018). The SEIS/SEIR examined the potential environmental impacts due to the BSVII Project and identified measures to avoid, minimize, or mitigate those impacts. As such, mitigation measures, design requirements, and best management practices are documented and tracked in an Environmental Commitments Record (ECR). The ECR includes sustainability strategies and features to reduce energy and potable water consumption; incorporate on-site renewable energy systems where feasible; reduce stormwater runoff and protect water quality; reduce solid waste through recycling and reuse of materials; reduce greenhouse gas emissions during construction and operation; improve indoor environmental quality where applicable (such as at Newhall Yard); and integrate transit-oriented development (TOD) to create active, sustainable communities.

The Plan reaffirms these commitments and connects the dots between the BSVII Project's ECR, Sustainability Charter, and Envision™ Platinum goal.

2.3 Green Building Policy

The Green Building Policy, provided in Appendix B, commits VTA to incorporate green building principles into the planning, design, construction, operations and maintenance, renovation, and deconstruction of all capital, facility, and TOD projects on VTA-owned property. This includes the following:

- Meet all mandatory measures required by the California Green Building Standards Code (California Code of Regulations, Title 24, Part 11, also known as CALGreen) and incorporate as many voluntary measures for nonresidential structures as possible.
- Ensure projects meet the highest standards for energy efficiency by referring to the U.S. Green Building Council's Leadership in Energy and Environmental Design (USGBC LEED) program and ISI's Envision™ rating system.
- Incorporate on-site renewable energy systems (e.g., solar photovoltaic arrays and solar hot water) or carbon-free electricity (power generated without fossil fuels) to the maximum extent practicable, provided the systems are economically feasible.
- Ensure projects are designed to minimize water use for both indoor and outdoor uses and use fixtures and equipment that meet the U.S. Environmental Protection Agency's Water Sense ratings.
- Ensure projects are designed to minimize the use of non-organic herbicides, pesticides, and fertilizers.
- Include on-site recycling and compost programs for organic waste.
- Consider opportunities for on-site water reuse or recycling.
- Connect to recycled water infrastructure (purple pipes) for irrigation or process water whenever available.
- Comply with LEED indoor air quality standards for air filtration, ventilation, and selection of building materials to support the health and well-being of building occupants.
- Include requirements for quantifying the disposition of construction debris and waste in contract specifications.

- Comply with all applicable VTA policies, including VTA's Sustainable Landscaping Policy (see Appendix B).
- Comply with VTA's Municipal Separate Storm Sewer System (MS4) Permit.
- Use vegetation, soil, and other green infrastructure elements to reduce and treat storm water at its source.
- Require outside developers to consider Zero Net Energy (ZNE) building practices for new residential and commercial construction and include such guidance in VTA proposal criteria (weighted such that proposals that make stronger commitments to ZNE measures are considered more favorably).

For any project with an overall budget of $100 million or greater, such as the BSVII Project, this Policy also requires the development and implementation of a Sustainability Plan and the designation of a Sustainability Coordinator. Therefore, this BSVII Sustainability Master Plan fulfills the requirements of VTA's Green Building Policy. The responsibilities of the BSVII Sustainability Coordinator are provided in **Section 4 Roles and Responsibilities**.

Artist's rendering of possible future transit-oriented development at VTA's Downtown San José BART Station.

3 Sustainability Requirements for the BSVII Project

As part of this Plan, a Sustainability Matrix was prepared to map out the various sustainability requirements and responsible disciplines. The BSVII Project will be delivered through four main construction Contract Packages (CP): Systems, Tunnel and Trackwork, Stations, and Santa Clara Station and Newhall Yard. These contracts are planned to be a combination of design build and progressive design build. Each CP will include sustainability requirements, as outlined in the Sustainability Matrix provided in Appendix C, at time of Request for Proposal (RFP) issuance. This will help ensure all potential Contractors understand the importance of Sustainability well before final design and construction begins.

3.1 Sustainability Matrix

The Sustainability Matrix includes sustainability requirements from the following sources: ECR for the BSVII Project, ISI Envision™ Guidance Manual, CALGreen, BART Facilities Standards, and the USGBC's LEED guidelines. The Sustainability Matrix includes key performance indicators (KPIs) or placeholders for KPIs that will be developed as the BSVII Project progresses through the design phase. In summary, the Sustainability Matrix pulls everything together in one place. It cross-references the various green building sources, includes KPIs as applicable, and identifies responsible disciplines across the four construction contracts.

The Sustainability Matrix, provided in Appendix C, is intended to be a ***living document*** that will be updated and maintained by the Sustainability Coordinator. Since the primary goal of the BSVII Project is to achieve Envision™ Platinum, the Sustainability Matrix is organized by Envision™ Criteria (see first column). It is the intent of this Plan that additional sustainability goals be developed as the BSVII Project progresses through the design phase. These goals include KPIs that are meaningful, measurable, and achievable. For example, after determining a project baseline, the BSVII Project Team will set a goal to reduce GHG emissions. This goal will include a percentage or unit of measurement that will be tracked and reported on a regular basis.

Another example of a KPI that will be developed in collaboration with the BSVII Project Team is the percentage of construction waste that will be diverted from the landfill. One notable feature of the BSVII Project is the innovative single-bore tunnel configuration, which will be the first transit project to use this methodology in North America. The large-diameter, single-bore tunneling method avoids much of the surface level impacts associated with traditional cut and cover construction. However, this method also involves a large amount of excavated material and tunnel muck. The ability to reduce construction waste by recovering, reusing, and recycling materials will be a significant effort to meet the sustainability commitments for the BSVII Project. Mechanisms to track and report waste are required. See Contract Document Volume 1 Specification Section, 01 74 21, Waste Management, for more information.

The KPIs complement and do not duplicate the goal to achieve Envision™ Platinum. In fact, some Envision™ sustainability and resilience indicators include KPIs. For example, Resource Allocation 3.2,

requires a project to reduce potable water use by 100% and overall water use (potable and nonpotable) by at least 50% to achieve all 22 points in this category.[3] The Sustainability Matrix sets a KPI of reducing potable water use by 50% and overall water use of 20% to achieve 9 out of the 22 possible points in this category.

3.2 Tracking Our Progress

The Envision™ framework and corresponding KPIs will be used to track compliance with the various sustainability requirements. The objective is to obtain as many points as possible, with the goal of achieving the points necessary for Envision™ Platinum (500 of the 1,000 available points). The points are collected across 64 sustainability criteria addressing a wide range of indicators, including community quality of life, mobility, collaboration, planning, sustainability management, materials, energy, water, economic prosperity, environmental impacts, air pollution, greenhouse gas emissions, and resilience, to encourage flexibility and applicability to a variety of projects.

Each of the 64 sustainability and resilience indicators, or credits, has a set of criteria that a qualified Envision™ Sustainability Professional (ENV SP) looks for when determining if the qualifications for each level of achievement[4] have been met. Achievement is demonstrated by **extensive reporting and documentation requirements**. In addition, there are other tracking and reporting tools available to assist contractors in organizing and preparing the necessary documentation to demonstrate achievement and compliance. For example, industry recognized calculators can be used to track return on investment life cycle costs and waste diversion during construction. Appendix E provides Envision™ Submittals and examples of tracking and reporting tools.

Throughout the design and construction phases, there will be periodic reporting on the progress towards meeting the respective sustainability commitments identified for each contract package. Contract Document Volume 1 Specification Section, 01 35 74, Sustainability Requirements, will include requirements for **sustainability implementation plans specific to each contract package**, including the schedule, frequency, and method for reporting progress.

Progress towards meeting sustainability goals will be shared with the public to increase accountability and transparency, as well as to celebrate accomplishments. This will include social media and blog posts, the Sustainability Dashboard on the BSVII Project's website, and other outreach methods.

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[3] *Envision: Sustainable Infrastructure Framework Guidance Manual Version 3*, Resource Allocation: Water, RA3.2 Reduce Operational Water Consumption.

[4] The Envision Levels of Achievement define the level and quality of project performance in each credit as follows:

- Improved: Performance that is above conventional. Slightly exceeds regulatory requirements.
- Enhanced: Sustainable performance that is on the right track. There are indications that superior performance is within reach.
- Superior: Sustainable performance at a very high level.
- Conserving: Performance that has achieved essentially zero negative impact.
- Restorative: Performance that restores natural or social systems. Such performance receives the highest award possible and is celebrated as such. The Restorative level is not applicable to all performance objectives.


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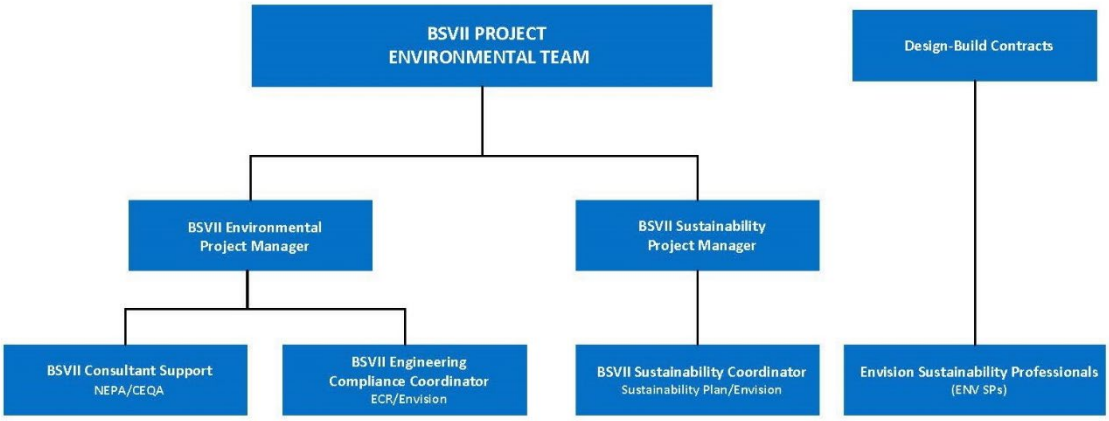
4 Roles and Responsibilities

Implementation of this Plan requires a dedicated project team to ensure that sustainability requirements are integrated into the design, specified in contract documents, tracked for compliance, and reported periodically to the public, interested stakeholders, VTA executive staff, and the VTA Board of Directors.

The following discussion describes the roles and responsibilities of VTA staff and consultants related to sustainability for the BSVII Project as illustrated by the following chart:



Each Contract Package will have an assigned ENV SP that will coordinate with the BSVII Project Environmental Team. This individual would report to the Design-Build Contractor.

4.1 Environmental Project Manager

The BSVII Environmental Project Manager has the following key responsibilities:

- Oversees all requirements of the National Environmental Policy Act (NEPA) and the California Environmental Quality Act (CEQA) and related laws and regulations for the BSVII Project.
- Coordinates with all design teams to track proposed design changes to the approved project, as described in the most current environmental document(s), and to evaluate whether any design change requires additional technical analyses and inclusion in a subsequent environmental document.
- Develops and tracks budgets and schedules related to environmental clearance for the BSVII Project.
- Stays current on environmental legislation, guidance documents, policies, and other information that may impact the environmental clearance of the BSVII Project and communicates any new requirements to the BSVII Project team.
- Consults with VTA legal counsel on any matters related to NEPA and CEQA for the BSVII Project.
- Manages multi-disciplinary consultant teams assigned to work on NEPA and CEQA documents and the ECR.

- Communicates directly with Federal Transit Administration (FTA) environmental staff assigned to the BSVII Project for matters pertaining to NEPA and the Mitigation Monitoring and Reporting Program (MMRP).
- Communicates with other state and local jurisdictions for matters related to CEQA.

4.2 Sustainability Project Manager

The BSVII Sustainability Project Manager has the following key responsibilities:

- Guides the overall progress of the BSVII Project towards meeting sustainability commitments.
- Acts as the BSVII Project liaison with VTA's agency-wide Sustainability Program.
- Oversees the implementation of VTA's Green Building Policy and other agency policies, as applicable to capital projects, including the BSVII Project.
- Provides direction to the BSVII Sustainability Coordinator on the development, tracking, and reporting of sustainability performance measures applicable to the BSVII Project.
- Serves as an Expert Technical Advisory Panel member in the review of sustainability section(s) in RFQs, RFPs, etc. for the BSVII Project contract packages.
- Collaborates cross-functionally with all VTA Divisions on sustainability topics that are relevant to BSVII Project, such as External Affairs and Operations.
- Produces the agency-wide, annual Sustainability Report that tracks the progress of VTA's Sustainability Program and highlights noteworthy projects, such as the BSVII Project.
- Establishes and maintains cooperative working relationships and partnerships with sustainability stakeholders and represents VTA at meetings with outside agencies concerning sustainability related matters.

4.3 Sustainability Coordinator

The BSVII Sustainability Coordinator has the following key responsibilities:

- Ensures implementation of the of the BSVII Sustainability Master Plan.
- Develops the sustainability KPIs in collaboration with the BSVII Project team and tracks progress to meet established targets.
- Tracks and updates the Sustainability Matrix applicable to changes in regulatory, policy, or other requirements and informs the BSVII Project team of those changes and implications.
- Tracks and documents Envision™ submittals.
- Collaborates with the BSVII Project team to identify innovative ways to address sustainability requirements.
- Advises on the applicability and integration of the Envision framework in the design, construction, and operation of the BSVII Project.
- Works with the Engineering Compliance Coordinator to review contract specifications and plans related to sustainability requirements.
- Reviews and comments on BSVII Project team submittals related to sustainability.
- Leads the Sustainability Delivery Team.
- Serves as a Subject Matter Expert on sustainability issues for the BSVII Project team and coordinates with the Engineering Compliance Coordinator on issues that concern an engineering standard.

- Supports the Sustainability Project Manager on tasks related to communication with sustainability partners and stakeholders, updates to the BSVII Project sustainability webpage, promotion of sustainability efforts, and performs other tasks, as necessary.

4.4 Engineering Compliance Coordinator

The BSVII Engineering Compliance Coordinator has the following key responsibilities:

- Ensures implementation of the of the Environmental Commitments Record (ECR) for all mitigation measures, design requirements, and best management practices, including those related to sustainability.
- Works with BSVII Team to write all environmental contract specifications, including those related to sustainability.
- Advises on applicability and integration of the Envision™ framework in the design, construction, and operation of the BSVII Project.
- Advises on costs and schedule implications of sustainability elements in the design of the BSVII Project.
- Collaborates with the BSVII Sustainability Coordinator to track and document Envision™ submittals.
- Collaborates with the BSVII Sustainability Coordinator to review and comment on all BSVII Project team submittals related to sustainability.
- Serves as a Subject Matter Expert on engineering and other technical issues related to sustainability for the BSVII Project team.
- Inspects project construction and field activities for ECR compliance and sustainability verification.

4.5 ENV SP Designee or Compliance Representative

In accordance with Contract Document Volume 1 Specification Section, 01 35 74, Sustainability Requirements, each Design-Build Contractor will be required to assign an ENV SP Designee or Compliance Representative with the following key responsibilities:

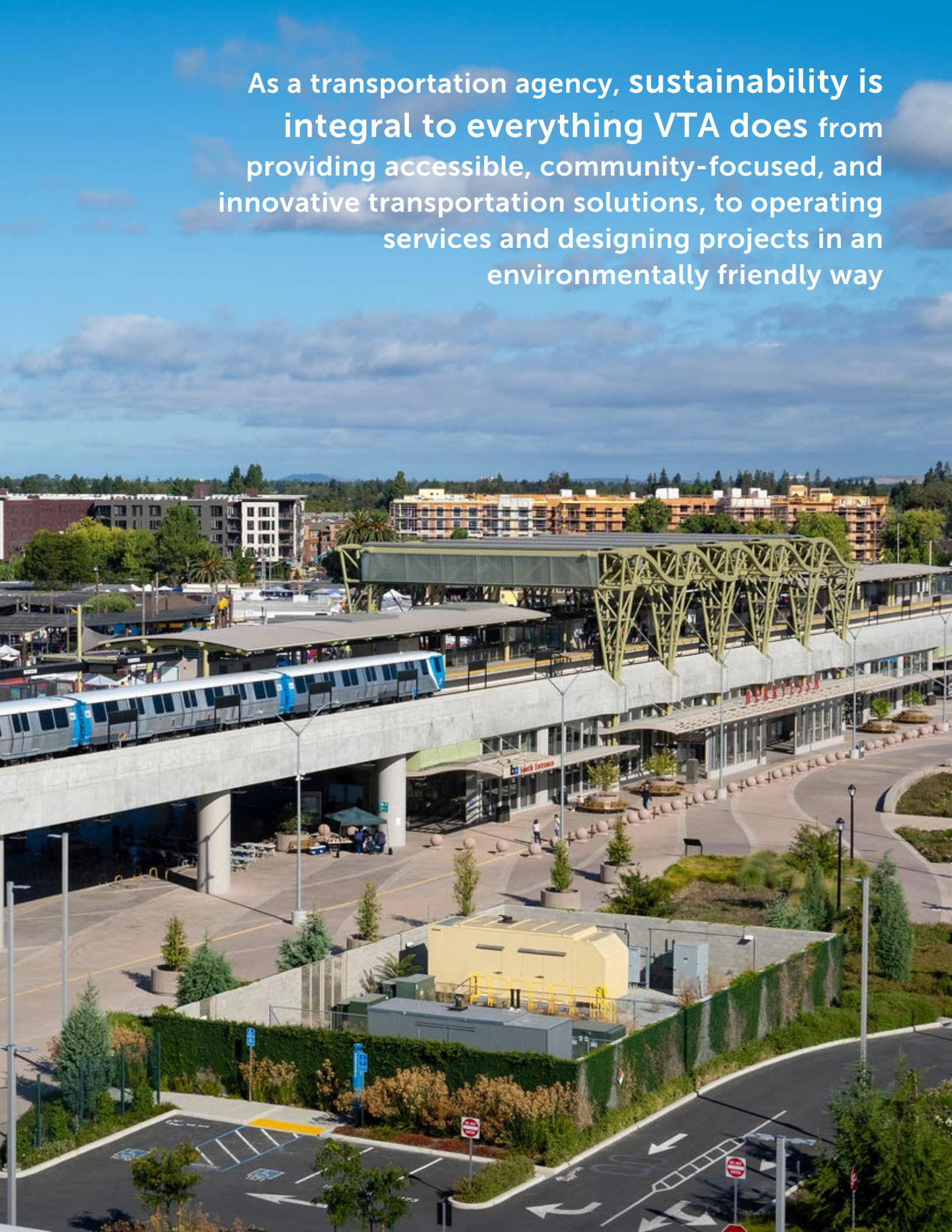
- Participates in the Sustainability Delivery Team meetings.
- Supports the design-build team with Envision™ submittals.
- Investigates additional opportunities to divert waste from landfill and to maximize operations in accordance with the waste management goals and requirements.
- Attends design and construction review meetings to ensure compliance with sustainability requirements during the design-build process.
- Collects and submits data to deliver required reports and documentation demonstrating progress with meeting sustainability requirements.
- Prepares for Quality Safety/Environmental Manager audits of the sustainability requirements, tracking, and reporting.

4.6 Sustainability Delivery Team

The successful implementation of the Plan requires project-wide support. The Sustainability Delivery Team will be co-chaired by VTA's Sustainability Project Manager and the Sustainability Coordinator. This team will be convened once the Design-Build contractors are selected and will grow and contract as the project progresses. Reporting on the progress towards achieving Envision™ requirements will be discussed at team meetings as well as collaboration and coordination of the different sustainability elements within the contract packages. Sharing the challenges, opportunities, and best practices will be a benefit of convening this team. Membership of the Sustainability Delivery Team would include the design-build ENV SP designees or compliance representatives for each contract package, the Environmental Compliance Engineering Coordinator, and the following representatives as needed:

- BSVII Project management,
- Design and contract package representatives,
- Quality, Health, Safety, and Environment (QHSE),
- Procurement, and
- Technical experts in the various fields (e.g., noise and vibration).

As a transportation agency, **sustainability is integral to everything VTA does** from providing accessible, community-focused, and innovative transportation solutions, to operating services and designing projects in an environmentally friendly way



5 Summary

As United Nations Secretary General, António Guterres, stated in his remarks to the United Nations Climate Conference in 2017, "The world should adopt a simple rule: if big infrastructure projects are not green, they should not be given the green light. Otherwise, we will be locked into bad choices for decades to come." ***This BSVII Sustainability Master Plan follows this simple rule and sets the stage for ensuring that the BSVII Project will not only be the largest single public infrastructure project ever constructed in Santa Clara County but also the most sustainable.*** The Plan will be followed by the implementation of sustainability requirements in the BSVII Project design documents and contract packages, including the requirements of extensive reporting and tracking to achieve Envision™ Platinum from ISI. The Sustainability Matrix referenced herein will be updated and maintained throughout this process recognizing that sustainability work is dynamic and evolving and requires the support of a dedicated team and executive leadership.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