

## Muni Math Facts & Word Problems

**1-California:** The **1-California's** current full-time downtown-inbound-eastbound terminal at Drumm & Clay initially took effect only on weekends and holidays—with the original finish line located 3 blocks and 2 bus stops south, at Howard & Main. This service shift/cut was one of many that affected the residents, commuters, politicians, and employees of the San Francisco Municipal Transportation Agency (SFMTA) in the city and county of San Francisco, CA, beginning in late 2009.

**1AX-California A Express, 1BX-California B Express:** These two weekday morning- and evening rush hour/peak period-only commuter express routes share the same eastbound downtown terminal at Davis & Market Streets—albeit bearing different western origins.

The **1AX** starts at Geary & 33<sup>rd</sup> Avenue—along with the **1-California** local—making select stops on California Street (10 total). The **1BX** begins at California & 6<sup>th</sup> Avenue, adjacent to the **44-O'Shaughnessy** bus route terminal, making alternate bus stops as its sister express route (totaling 12), with no joining of the two lines until Davis & Market. Between each route's respective final stop on California Street, a lengthy gap between the Inner Richmond and downtown occurs—with no bus stops until the end of each line.

Prior to a tremendous systemwide series of budget deficit-induced service changes for Muni on Saturday, December 5<sup>th</sup>- and Monday, December 7, 2009, respectively, the **1BX** terminated 8 blocks west of California & 6<sup>th</sup> Avenue—making four more stops on California Street (at 8<sup>th</sup> Avenue, 10<sup>th</sup>, 12<sup>th</sup> Avenue, and Park Presidio Boulevard [kitty-corner to the terminal of the **28L-19<sup>th</sup> Avenue Limited** bus route)—at California & Park Presidio.

Like the **8AX, 8BX, 16X, 31AX, 31BX, 38AX, 38BX,** and **NX,** the above two routes serve as morning- and evening rush hour/peak period shuttles from neighborhoods in the western regions of San Francisco to the Financial District downtown—primarily for convenience purposes for workers residing on opposite ends of the City as their job(s). However, ordinary, non-downtown-working city residents can also ride these routes for regular fare price, or with their paper transfer or Clipper Card in hand. Each route runs singularly—in the heavier daily peak period direction (eastward-/downtown bound in the mornings, and westward-/Ocean Beach bound in the afternoon-evenings).

**2-Clement:** Before December 5, 2009, the 2-Clement covered much greater ground on Clement Street—extending 20 blocks west of its current terminal at Park Presidio Boulevard, to 33<sup>rd</sup> Avenue in the Outer Richmond—making several stops along the way, thus causing Clement Street to be the dominant domain of the **2-line**. During that time in history, the **2-Clement** also terminated at Market/Sutter & Sansome Streets downtown on weekends and holidays—a few blocks shy of its weekday (later permanent) terminal at Steuart & Market Streets—near the Ferry Building. With those two termini now terminated, Sutter Street presently dictates the dominant portion of the **2's** route (totaling 22 bus stops, and 2/3 [66%] of the line itself).

**5-Fulton:** The sometimes shortened version of this electric trolleybus route allows the **5** to turn around at Fulton & 6<sup>th</sup> Avenue (only on occasion during weekday evening peak periods, and when a specific electric trolleybus operating on the **5-line** is finished for the day and needs to head for home at Presidio Avenue & Geary—accessible via an extended set of overhead wiring from Fulton & 6<sup>th</sup> Avenue heading towards Balboa Street, and over to the Presidio Division), near the former terminal of the **21-Hayes**—in turn cutting the **5**'s run down Fulton Street off by 43 blocks, 18 bus stops<sup>1</sup>,  $\frac{3}{4}$  and 75% all together—heading west to Ocean Beach.

**6-Parnassus:** Although bustling with doctors, patients, students, and a handful of local Inner Sunset residents at UCSF (University of California, San Francisco) Medical Center, Parnassus Avenue itself is rather short—beginning at 4<sup>th</sup> Avenue (dipping in- and out of the eastern end of Judah Street) and extending east to Clayton Street. The **6** makes a total of 8 stops in 5 minutes on “its Avenue”, instead owning Market Street as its lengthier road—beginning at Haight/Gough, heading all the way east to Steuart Street and the Ferry Plaza—stopping at almost every other block along the way, alongside numerous other bus- and one vintage-historic streetcar route thereon. On occasion, at random moments throughout the day and night, the **6-Parnassus** will terminate early at Ortega & 10<sup>th</sup> Avenue—a mere 6 stops from its regular endpoint at Quintara & 14<sup>th</sup> Avenue, thus reducing its outbound run by a slim 12% and 2/25.

**8X-Bayshore Express:** In this case, this route runs like an Express on Bayshore Boulevard—containing a mere 3 stops therein. Areas of immense stoppage and passenger loads for the **8X** include Geneva Avenue (owning 15 stops—extending from City College at Phelan Avenue, to the Cow Palace and entrance to Sunnydale/Visitacion Valley at Santos Street) and 3<sup>rd</sup> Street (segueing into Kearny Street due north of Market Street—bearing 11 stops).

Historically, this is not the first Muni route to bear the number “**8**” as its numeric identity. Prior to the permanent installation of the one and only historic above ground streetcar line, the **F-Market** (later rechristened “**F-Market & Wharves**” in 2000) in 1995, an electric trolley bus entitled “the **8-Market**” ran the entire length of Market Street from Castro, all the way to Steuart & Market and the Ferry Plaza. When the **F-line** began providing regular Grade A service in October 1995, the **8** was retired after decades of devoted passenger service along San Francisco’s “Main Street” (not to be confused with the actual street of that title, located downtown near The Embarcadero, running north-to-south, south of Market Street).

Additionally, the **8X** bears some history of its own. Beginning as “the **9X-San Bruno Express**”—operating from Geneva & Mission to Kearny & Pacific (the current terminal of the **8AX-Bayshore A Express**)—this articulated diesel bus route lightened the loads of the lengthy [both physically and in terms of mileage] **9-San Bruno** and (now deceased) **15-Third Street** bus routes. On Saturday, April 7, 2007—following years of planning, construction, and pilot testing of an old-new light-rail route—the **15** was laid to rest, the [former] **9X** changed its name to “the **9X-Bayshore Express**”, and extended its

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<sup>1</sup> Do the math to figure out approximately how many blocks lie between each bus stop therein.

daily operations west of Geneva & Mission to City College at Ocean & Phelan, and north of Kearny & Pacific to Fisherman's Wharf—covering identical ground as the former **15** on either end of its old route. The middle ground on 3<sup>rd</sup> Street was overtaken by the much-anticipated **T-Third Street** light-rail route, complete with brand new tracks and overhead wiring, venturing downtown via tracks shared by the **N-Judah** along the southern portion of The Embarcadero—followed by the same Muni Metro underground subway segment as the other routes in the system. On December 5, 2009, to save confusion with the name and territory of the **9-San Bruno** and its newborn younger sibling, the **9L-San Bruno Limited**, the **8** was reborn in Express form as the current **8X-Bayshore Express**.

**8AX-Bayshore A Express:** This weekday rush hour-/peak period-only route—making ONE SINGLE STOP on Bayshore Boulevard—begins in Daly City at Geneva & Schwerin, and ends at Kearny & Pacific—serving as a shortened, commuter-friendly version of the **8X**. In the mornings, this route operates north-/inbound from Geneva & Schwerin to Kearny & Pacific—running in reverse in the evenings. In the opposite direction(s) during peak periods, the **8X** resumes control.

**8BX-Bayshore B Express:** During daily morning and evening rush hour-peak periods, the **8BX** replaces the **8X** (only in title form) in the dominant peak-hour direction. The route run itself is identical to the daytime and weekend route (**8X**) from beginning to end. In the mornings, this route operates in-/northbound from City College to Fisherman's Wharf—with the reversal taking effect in the evenings. The opposite direction (south-/outbound in the mornings; north-/inbound in the evenings) is owned by the **8X**—title, territory, and all.

**8-Shuttle:** On January 21, 2012, the San Francisco Municipal Transportation Agency began construction for the thorough Central Subway, dubbed “Phase II of the Third Street Light Rail Project”. Although maligned by a majority of San Francisco residents and commuters due to the project's environmental hazards, seclusion to one major tourist-oriented neighborhood, significant rerouting- and elimination of major local transit connections with the **T-Third Street** light rail route, and downright inconvenience to basic public transit travel underground, the City of San Francisco went through with the idea as planned, and in an effort to complete the new subway extension, designed a new (temporary) shuttle bus to accommodate passengers traveling between Chinatown (Kearny & Pacific) and 4<sup>th</sup> & Folsom (the future locale of the Central Subway, above- and below ground, respectively).

The 11-stop **8-Shuttle** directly overlaps with the downtown portion (19%) of the **8X-Bayshore Express** and the first 6 stops of the **30-Stockton** and **45-Union/ Stockton** heading north. At 7 stops (northbound) and 5 stops (southbound), Kearny (north) and Stockton Streets (south) constitute its areas of dominance in each direction, at 64% and 45%, respectively.

**9-San Bruno:** During the week, this route operates standard 40-foot size hybrid diesel buses. This is due to its reduced passenger load, brought on by its associate of Limited capability, the **9L**. Together, the intertwined lines operate 5 minutes apart—

every 10 minutes, respectively. On weekends and holidays, with the Limited absent from service, the **9-San Bruno** local operates articulated buses (as it did regularly before the **9L** was introduced on December 7, 2009)—making the same stops as it does during the workweek. It does, however, bear an abbreviated downtown weekend terminal—at Market & 2<sup>nd</sup> Street, alongside a similarly shortened but physically lengthened **71-Haight/Noriega** bus route.

**9L-San Bruno Limited:** One of Muni’s newer bus routes (inaugurated on Monday, December 7, 2009), the **9L** was included in Muni’s makeover over the aforementioned weekend. Serving passengers who would otherwise overcrowd the local **9-line** (during the midday weekday non-peak period timeframe only [8 ½ hours to be exact—from 9:00 a.m.-5:30 p.m.]), the **9L** shares the same beginning terminal as the **9** local, downtown at Main & Mission—making four stops on San Bruno Avenue, terminating at Arleta & Bayshore, near the southern terminal of the **T-Third Street**, providing limited service every step of the way.

**10-Townsend:** Another new 21<sup>st</sup> Century Muni route, the **10** came to San Francisco in 2001 to replace half of the former **42-Downtown Loop** line—a complex, roundabout route which operated from the Caltrain Depot at 4<sup>th</sup> & Townsend, along Van Ness Avenue, heading northeast to Fisherman’s Wharf, then south of Market Street back to the Caltrain Station. The other half of the route ran in reverse from 4<sup>th</sup> & Townsend, through the SOMA (South of Market Area), Financial District, Fisherman’s Wharf, south along Van Ness, and back home to Caltrain. With all of this spinning, Muni divided the puzzling **42** into two separate routes—each taking one-half of the old **42** route, retracing their respective steps from Point A to Point B, and back again. From 2001-2009, the **10** operated from 17<sup>th</sup> St. & DeHaro, south of Market Street, to Van Ness & North Point (connecting with the terminus of the **49-Van Ness/Mission**, **30-Stockton**, and for a 2 ½ year period, a short-lived short electric trolleybus route known as “the **20-Columbus**”). But that all changed on December 5, 2009. Rerouting to compensate for a reduced **12-Folsom/Pacific** route, the **10** began operating on weekdays from 24<sup>th</sup> St. & Potrero to Jackson & Fillmore. On weekends and holidays, the **10-Townsend** terminates at Van Ness & Pacific.

**12-Folsom/Pacific:** Through December 4, 2009, the **12** owned two north-/inbound terminals—at Jackson & Fillmore, and Pacific & Van Ness—operating on a rotational basis from 26<sup>th</sup> Street & Mission to either of the above two destinations (with the Ferry Building occasionally interwoven). Beginning December 5, 2009, the **12-line** regularly operates from its current southern terminal at 24<sup>th</sup> Street & Mission to Pacific & Van Ness.

Note: Although the south-/outbound **12** headlines “**Chavez & Valencia**” as its destination, its actual terminal lies at 24<sup>th</sup> & Mission—four stops after the one above.

**14-Mission:** If it weren’t for one tiny little stop on Market & Steuart Streets, the **14** would otherwise hold the honor of being the only Muni route (bus, streetcar, or light-rail) to spend its entire run on its entitled region. The **14** begins its lengthy Missionary travel at San Jose Avenue in Daly City (Mission Street stretches further south into Colma) and

ends at the eastern tip of Mission Street, intersecting with Steuart Street—one block west of The Embarcadero, and the Ferry Building. Mission Street itself is not one solid straight line. Rather, it consists of a dynamic series of hills, small turns, dips, and arches all across the southern region of San Francisco—similar to the setup of 3<sup>rd</sup> Street, and the majority of the former **15** bus route.

Note: The **14**'s stop at Main Street is equidistant to both Market AND Mission Street, so it technically counts as leaning towards the latter of the two roads. Heading outbound, the **14** makes two brief stops on the small side road of Otis Street.

**14L-Mission Limited:** Like its local partner, the **14L** lies only one stop shy of a 100% Mission Street run—heading inbound, that is. Terminating at Mission & Main Street (formerly the Ferry Plaza/Steuart & Mission on weekdays, and the [former] Transbay Terminal @Mission & Fremont on Saturdays, with no Sunday service whatsoever—prior to December 5, 2009)—the **14L** does in fact own a Mission Street-filled operation heading outbound. Being a bus route with Limited ability, the **14L** makes a total of 23 stops—approximately 11/26 and 43% of the amount of its local ally. Of all the Limited bus routes belonging to Muni, the **14L** holds the honor of being the only one to operate 7 days a week (Sundays and holidays included)—bearing the same level of service all the way through. On January 23, 2012, the **14L** was furthered one stop westbound at the Daly City BART Station only during morning and evening peak periods to make better connections with the **28-19<sup>th</sup> Avenue** and **54-Felton**, as well as BART itself.

**14X-Mission Express:** This weekday rush-hour-only route covers for the **14L** during said time blocks, traveling in the respective dominant direction during the morning (east) and evening (west). Making a total of 30 stops (7 more than its Limited assistant; 15/26 and 58% of the amount of its local authority), the **14X** veers off Mission Street for *three* straight stops, at: 6<sup>th</sup> Street & Bryant (Harrison, heading outbound), Trumbull & Congdon, Trumbull & Stoneybrook (Alemany @ St. Mary's Park Overpass), with a fourth at the start of its east-/inbound run, at Sickles & Alemany—near the beginning/endpoint of the **88-BART Shuttle** bus route.

**16X-Noriega Express:** Sharing much of its route with the **71L-Haight/Noriega Limited**, the secluded weekday-peak-period-dominantly-directed **16X** experiences a gap in stoppage points between Lincoln Way & 9<sup>th</sup> Avenue in the Inner Sunset/Golden Gate Park Neighborhood, heading directly downtown and not (un)loading passengers until Oak & Franklin. Before December 7, 2009, the **16X** was divided into two routes: the **16AX-Noriega A Express** (operating from Ortega & 48<sup>th</sup> Avenue—the western terminal of the **71**, **71L**, and the current **16X**—to Market & 4<sup>th</sup> Street [the terminal maintained for the **16X**], and the **16BX-Noriega B Express** (operating from Noriega & Sunset to Market & 4<sup>th</sup> Street—sharing a short run with the **29-Sunset** along Sunset Boulevard, together heading over to Lincoln Way at 36<sup>th</sup> Avenue and traveling east thereon, before the former joined its long lost twin at Lincoln Way & 22<sup>nd</sup> Avenue). Both routes shared stops from that point forward heading downtown.

Upon the arrival of Muni's new financially-based service era, the **16BX** was eliminated from operation due to low ridership—brought on by its constant paralleling of the aforementioned routes. The **16AX** was renamed “the **16X**”, and the rest is history.

**17-Park Merced:** The exception to the rule of having two terminals, the **17** serves as one basic loop from West Portal Station to Stonestown, San Francisco State University, Parkmerced, and back again. Its destination displays “**Loop**” in the headline, with the recurring automated announcement, “*Seventeen-Park Merced to...San Francisco State University—West Portal Station*”. In this case, San Francisco State University serves as the midpoint (the 16<sup>th</sup> stop out of the complete 32) of this community-centered route operating a 30-foot bus, with West Portal Station being the layover terminal. The fact that only 22/32 (11/16, 69%) stops share spaces on opposite street corners—7 in Park Merced, with the remaining 15 located north thereof between San Francisco State University and West Portal Avenue, inclusive—makes the **17** a “one-way” route.

**18-46<sup>th</sup> Avenue:** With 46<sup>th</sup> Avenue serving as the centerfold of this San Francisco west coast corridor route, the northern portion of the **18-line** changed significantly on December 5, 2009. With the elimination of the **38-Geary** to Ocean Beach via Balboa Street (subsequently terminating at the former **2-Clement** destination of 32<sup>nd</sup> Avenue & Balboa—in front of George Washington High School), the **18** was called to serve the **38**'s former territory from Cabrillo & La Playa to 33<sup>rd</sup> Avenue & Geary, before continuing uphill to its own everlasting terminal at the Legion Of Honor. Rather than venturing up the Great Highway, beside the Cliff House, over to Geary Street, and following the **38L** and **38** for 15 blocks—from 48<sup>th</sup> to 33<sup>rd</sup> Avenue (for a total of 8 bus stops) before turning left, the **18** changed direction from straight (north) to a right-turn (east), following the **31** from its Ocean Beach terminal at Cabrillo & La Playa to Balboa & 33<sup>rd</sup> Avenue (sharing 9 stops along the way), then turning left onto 33<sup>rd</sup> Avenue and journeying 2 blocks/bus stops north to Geary (teaming up with the inbound **38** at Anza and Geary), then continuing its trip as originally designed—making 3 more stops (teaming up with the inbound **1-California** at Geary and Clement) before calling it quits at the Legion. At 33<sup>rd</sup> Avenue & Geary, the **18** changed its north-/inbound bus stop from the northeastern- to the southeastern corner of the intersection (the former of which was kitty-corner to the **1-California** terminus; the latter of which is shared with the inbound **38**). Its south-/outbound stop remains at the northwestern corner thereof, kitty-corner to the bus stop belonging to the outbound **38-Geary** heading towards Fort Miley Hospital, and the **38L-Geary Limited** traveling towards Point Lobos & 48<sup>th</sup> Avenue, adjacent to the Cliff House.

**19-Polk:** Before the fate of December 5, 2009, the **19-Polk** would alternate south-/outbound terminals between its ultimate destination of the Hunter's Point Naval Shipyard, and an early ending at Townsend & 7<sup>th</sup> Street—the latter eliminating nearly one entire third of the southern end of the route (26 stops in all). As of December 5, 2009, only the Navy Yard serves as the southern terminus of the **19-line**. On the northern end lies the bulk of Polk Street—touching the route en route to its inbound terminal at Polk & Beach, near Fisherman's Wharf, making up one-fifth of the entire bus route. The remaining fourths of the route cover ground in: Potrero Hill, SOMA (South of Market

[Street] Area), and Bayview-Hunter's Point. Returning south, the **19** quickly glides across Polk before its Street possession is no more.

**21-Hayes:** If it weren't for December 5, 2009, the **21** would extend 7 stops west of its current terminal at Hayes & Stanyan—instead terminating at Fulton & 8<sup>th</sup> Avenue. Fortunately, its west-/inbound, downtown destination at the Ferry Plaza remains intact. Nevertheless, Hayes Street constitutes a whopping  $20/32^2$  and 63% of the **21**'s ride.

**22-Fillmore:** Making up approximately one-half of the **22-line**, Fillmore Street resides closer to the northern portion of the **22**—beginning at Hermann Street near Church & Duboce, and ending at Bay Street (near the terminus of the **43-Masonic** at Chestnut & Fillmore). Heading north-/inbound, the **22** serves a handful of stops resting in Potrero Hill and the Mission before reaching its entitled street of Fillmore. Traveling back south, Fillmore is covered at the beginning of the route before becoming forgotten by the multitude of stops in the aforementioned districts.

**23-Monterey:** With Monterey Boulevard lying on a tiny  $7/37$  [19%] of the **23**'s entire 74-stop route (containing 14 bus stops thereon), other major areas of the line include Sloat Boulevard at the western end in the Outer Sunset (consisting of 17 stops), and Palou Street on the eastern front in Bayview-Hunter's Point (owning 13 stops).

**24-Divisadero:** As with the **19-Polk** and **22-Fillmore** before it (chronologically speaking), heading inbound, the plurality of the **24-line** does not hit the route until its northern run—beginning at Haight Street and ending at Jackson, near its terminal at the intersection of Fillmore (stopping for passengers 13 times along the way). Besides Divisadero Street, Castro Street (15 stops) and Cortland Avenue (10 stops) reign supreme on the **24**'s extremely hilly ride from Point A (3<sup>rd</sup> Street & Palou) to Point B (Jackson & Fillmore), and back again.

**27-Bryant:** Although Bryant Street holds one-third (17 stops) of the **27-line** down strong, heading north-/inbound, another dominant realm takes the form of Leavenworth Street—with 12 stops and one-fourth/25% of the route under its belt.

**28-19<sup>th</sup> Avenue:** Undoubtedly the busiest portion of the route, 19<sup>th</sup> Avenue makes up the lengthiest section of the **28-line**—marking ground between  $\frac{1}{2}$  and  $\frac{1}{3}$  of the total route (totaling 22 stops). However, it is succeeded (heading north-/inbound)/preceded (traveling south-/outbound) by a fair stretch along Park Presidio in the Richmond (4 stops), with the additions of the Golden Gate Bridge (2 stops) and Lombard Street (8 stops) to contain a set of 14 stops and  $\frac{1}{3}$  [33%] of the route itself.

**28L-19<sup>th</sup> Avenue Limited:** Operating only during morning and afternoon *school*day peak periods (ranging from 7:00-9:00 a.m. and 2:00-4:30 p.m.)—primarily to serve student commuters of all ages attending schools in the Sunset and Richmond Districts (with the **28-local** providing service to schoolchildren in the Marina), the **28L-19<sup>th</sup>**

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<sup>2</sup> Reduce this fraction into simplest form to get the same ensuring percentage.

**Avenue Limited** was originally primarily limited to 19<sup>th</sup> Avenue in its travels: stopping absolutely nowhere between Daly City BART Station and 19<sup>th</sup> Avenue & Holloway/San Francisco State University—unlike the **28-local**, which stops 3 times in the interim—making 12 stops thereafter (9 on 19<sup>th</sup> Avenue and 4 on Park Presidio Boulevard before reaching its longtime terminus at California Street [passing that of the **2-Clement** one block prior), all of which mark transfer points to other Muni routes.

Then on Monday, October 17, 2011—as a result of Muni customer feedback—the **28L** was extended by 4 stops north of Park Presidio & California to Fort Mason, reuniting with its local buddy once again. In doing so, 2 stops along 19<sup>th</sup> Avenue and 1 on Park Presidio became eliminated from service once provided by the **Limited**.

**29-Sunset:** Winning the gold medal for LONGEST route (95 bus stops in all!) belonging to the San Francisco Municipal Transportation Agency—containing no special express, limited, or rush-hour service, let alone lengthier vehicles to maintain frequently heavy ridership—the **29-Sunset** travels from the southeastern to the northwestern regions of San Francisco, covering at least one speck of terrain in every interlinking City neighborhood. On weekdays, right up until the enactment of December 5, 2009, this notorious route bore two north-/inbound terminals—one at David Letterman Hospital in The Presidio (adjacent to the travels therein of the **43-Masonic**), and the other at California & 25<sup>th</sup> Avenue in the Outer Richmond. Beginning on 12/7/09, the former ending was cut and the latter took over as the official stoppage of the **29-line**. Although service was cut from the Golden Gate Bridge, heading north (intersecting the pedestrian subway loop thereat of the **28-19<sup>th</sup> Avenue**), the **29** still holds onto its mark at Baker Beach—leaving traces at 5 more bus stops (the late 1/19 and 5% of its hefty travels): 25<sup>th</sup> Avenue & Lake Street, and El Camino Del Mar; followed by Lincoln Boulevard & Bowley Street, as well as Pershing Drive; essentially ending at Lincoln Boulevard & Bowling—up the sand path from the breakers. Following a brief layover thereat, the bus heads back to 25<sup>th</sup> Avenue & California, resting on the western side of the intersection before making its out-/southbound run all the way back to 3<sup>rd</sup> Street & Paul in Bayview-Hunter's Point.

**30-Stockton:** One of very few routes whose alternate terminals remained intact after the new San Francisco Municipal era began in December 2009, the **30-Stockton** rotates its endpoint(s) between Beach & Broderick (the full-length run) and Van Ness & North Point. Over 2 ½ years, from June 30, 2007-December 4, 2009, a now-retired electric trolleybus named “the **20-Columbus**” was brought in by Muni to ease crowding on the [former] **9X-Bayshore Express**, **30-Stockton**, and **45-Union/Stockton**, all of which shared the northern portion of the former **15-Third Street** bus route—going from 3<sup>rd</sup> Street & Townsend (one block from the Caltrain Station on 4<sup>th</sup> & Townsend) towards Fisherman's Wharf via The Financial District, Chinatown, and North Beach. It was during this time when the **30** would terminate at Union & Columbus (if/when not heading further west to the Marina)—8 stops before/after Van Ness & North Point—and operating 60-foot articulated electric trolleybuses to filter overcrowding on the standard 40-foot buses operating on the full-length **30-line** from the Caltrain Depot to Beach & Broderick. When the **20** became “too easy to operate” due to low ridership, the route was

scrapped—with the **30** slightly extending its abbreviated run to Van Ness & North Point, albeit maintaining the lengthier buses on the shorter route.

On a side note, the **30-Stockton** spends more time on Stockton Street heading southbound due to its parallel northbound run one block east on 3<sup>rd</sup> Street (converging into Kearny following Market Street). Traveling south of Sutter Street, the **30** hits three additional blocks and one passenger stop on Stockton (at Geary/Union Square) which are not shared by the northbound trip. When Stockton Street virtually dead-ends at Market Street, the sharp leftward wind made by the **30**, **8X**, and **45** routes marks the transition from Stockton to 4<sup>th</sup> Street (on which the **30** makes 6 bus stops). On January 21, 2012, at the commencement of construction for the Central Subway/Phase II of the Third Street Light Rail Project, the **30-Stockton** and **45-Union/Stockton** electric trolleybus lines were rerouted one block west heading south on 5<sup>th</sup> Street from Stockton & Sutter in Union Square, towards their terminal at 4<sup>th</sup> & Townsend in front of the Caltrain Station. Although the stop locations were different, the # thereof remained the same as before.

**30X-Marina Express:** Another shuttle secluded to the morning and evening weekday peak periods (rising in the east and setting in the west), the **30X** is the only limited/express route to share a numeric title (and a handful of stops) with its local all-day partner, albeit bearing a completely different street/region identification on its nametag. Although Marina Boulevard extends a fair distance on San Francisco's northernmost bayside, the Marina District covers greater ground through a commercial neighborhood on Union and Chestnut Streets. Therefore, it would be deemed appropriate for the **30X** to have “Marina” in its title, as opposed to “Stockton”, like the local electric trolleybus, since the **30X** never crosses Stockton Street once during its morning or evening run, and spends the majority of its travels in- and around the Marina.

**31-Balboa:** At the intersection of Arguello heading east-/inbound, Balboa Street swerves slightly to the left and becomes Turk Street from that point forward. Like Stockton-4<sup>th</sup> Street, this minor geometric alteration brings a new *street name* into the picture, even though the road is basically the same as that which travels westward. Traveling west-/outbound, the **31-Balboa** makes 5 additional bus stops on Turk Street in the downtown portion thereof—prior to hitting Eddy Street for 9 stoppages (6 fewer than the eastbound **31**, which reaches Eddy directly following Turk in the Inner Richmond and takes it all the way to Market & 5<sup>th</sup> Street), then resuming its run on Turk for the same 9 stops shared by the inbound **31**.

When the time comes for respective electric trolleybuses to head back home to their shelter at Presidio Avenue & Geary, the **31-Balboa** will terminate at Masonic & Turk and then veer off onto a set of sideline overhead wires heading towards the Presidio Division.

**31AX-Balboa A Express:** Like the **1AX**, the **31AX** follows the lead of its local electric trolleybus mentor—in the mornings from Ocean Beach/La Playa & Cabrillo along Balboa Street—as far as Park Presidio (making a total of 15 passenger stops along Balboa [3/4 of its entire route], before heading on a “freeway” of bus stop-free driving until it reaches its downtown destination of Davis & Pine. In the evenings, it simply retraces its step, albeit making one early bonus bus stop at Pine Street & Montgomery.

**31BX-Balboa B Express:** As with the **1BX**, the **31BX** picks up from where its alphabetical express predecessor left off—in this case, Balboa & Park Presidio at dawn, going against the sun towards the Financial District at Davis & Pine. By doing justice to the Turk Street region of the **31**'s run with 6 stops and 3/7 [43%] of its (the **31BX**) complete route, the **31BX** ventures forth on the road less traveled by its older sibling—eventually coming face to face with its rival downtown at their shared terminal bedroom. From Presidio Avenue & Geary, (sharing 2 prior stops with the **43-Masonic** at Turk, and Geary) the **31BX** begins its own private passenger-stop-free “right-of-way”, ending downtown. At dusk, the **31BX** mirrors its morning ride—with the additional bus stop at Pine & Montgomery.

**33-Stanyan:** For the **33**, Stanyan Street serves as more of a pit stop than a full-length roadway of travel. Quickly scanning four blocks and corresponding bus stops at: Fulton, Hayes, Oak, and Haight, the less-than-5-minute, 2/23-, 9%-worth-of-the-total-route hilly glide along Stanyan Street makes that tiny trim of this electric trolleybus line one of the shortest title plateaus in the history of public transit. The **33-line**'s realm of true dominance lies within 18<sup>th</sup> Street—extending from Mission to the northern tip of Market Street (displaying 12 bus stops [6/23 and 26% of the overall route] therein).

**35-Eureka:** Although the entire route of the **35-Eureka** runs through Eureka Valley, only 7 stops, 7/26, and 27% of this bus line's travels cover ground on Eureka Street. As stated in the **35**'s out-southbound destination, **Diamond Heights**, Diamond Street reigns as this route's larger span of territory—with 12 stops, 6/23, and 26% of its distance occurring on said street.

**36-Teresita:** The lengthiest of all the Muni routes operating short 30-foot hybrid-diesel buses (including the **17-Park Merced**, **35-Eureka**, **36-Teresita**, **37-Corbett**, **39-Coit**, **52-Excelsior**, **56-Rutland**, **66-Quintara**, **67-Bernal Heights**, as well as retired routes, **53-Southern Heights** and **89-Laguna Honda**), the **36-Teresita** originally operated from Balboa Park Station to Forest Hill Station, winding its way through narrow roads shared by the **43-Masonic**. But on December 5, 2009, the **36** DID NOT turn right off of Monterey Boulevard. Instead, it followed the **23-Monterey** heading east towards Glen Park Station, covering territory formerly held by the late **26-Valencia**, eventually terminating at Chavez & Valencia—coming head-to-head with the newly-revamped **12-Folsom/Pacific**, adjacent to the **27-Bryant**'s layover at Chavez & Mission. Regardless of its immensely extended route, the **36** bore identical terrain on Teresita Boulevard (constantly veering on and off the segmented street via Myra Way [one-ninth/ 11% of the route, with 9 stops therein])—albeit with a consequential smaller percentage in the bigger picture of things with the new route extension.

**37-Corbett:** Yesterday, December 5, 2009, a day that will forever live in San Francisco Municipal infamy, the **37-Corbett** no longer lay over at 14<sup>th</sup> & Church Streets—thereby solidifying its one and only southern endpoint at Burnett & Parkridge, without owning a backup. Fortunately, no service was cut, nor stops reduced.

**38-Geary:** This crosstown articulated bus route is the only Muni line to hold alternate endpoints *that contain their own route therein*. At any given time, Monday-Saturday, three **38-Geary** buses (two locals, along with the **38L-Geary Limited**) can be seen operating on each other's heels at various points throughout their cohesive lengthy routes. All three routes [may] meet at Geary & 33<sup>rd</sup> Avenue (intersecting with the terminus of the **1-California** electric trolleybus, and the **18-46<sup>th</sup> Avenue** standard hybrid-diesel bus), and then share the traffic-like, passenger-filled journey downtown towards the Transbay Terminal from there.

Heading west-/outbound past 33<sup>rd</sup> Avenue, the three coinciding routes encounter a fork in the road—in which one local turns left/south on 33<sup>rd</sup> Avenue, making three stops at: Anza, Balboa, and its terminal of 32<sup>nd</sup> Avenue & Balboa. Prior to the financial attack of December 5, 2009, this **38-local** would travel further west towards Ocean Beach along Balboa and Cabrillo Streets, following the **31-Balboa** every step of the way. But with the financial cutback came a corresponding 8-bus stop reduction, and a subsequent elimination of any **38-Geary** access of Ocean Beach whatsoever.

As for the other **38-local**, its post-33<sup>rd</sup> Avenue trip takes it toward Fort Miley Hospital at 43<sup>rd</sup> Avenue & Clement—sharing 3 stops with the **38L**<sup>3</sup> at Geary & 36<sup>th</sup> Avenue, 39<sup>th</sup> Avenue, and 42<sup>nd</sup> Avenue then reserving its own 3 at: 42<sup>nd</sup> Avenue & Clement, Fort Miley Hospital, and 43<sup>rd</sup> & Clement.

Traveling westbound from downtown, all **38** buses take Geary Street for an additional 11 bus stops. Heading east, Geary Street becomes a fork in the road at the intersection of Gough. Inbound **38**'s make a slight right onto Starr King Way for one block, which quickly turns into O'Farrell at Franklin Street—soon serving 7 passenger stops from Van Ness Avenue to Grant Street. This is just one example of east-west bus routes serving the Richmond District and downtown, paralleling their partner in the opposite direction on the easternmost end of their travels when streets alternate one-way directions, thus limiting transit travel of all types.

**38L-Geary Limited:** Serving the public from Monday-Saturday, this speedy route extends the furthest west along Geary Street—ending at 48<sup>th</sup> Avenue & Point Lobos, adjacent to the Cliff House. With the service reduction of the former Ocean Beach-bound **38-local**, the **38-Limited** now covers the greatest span of travel from downtown to the Outer Richmond. However, due to its limited capabilities, this route contains 13/24 and 54%-worth of the bus stops served by its Local allies. With the **38-Locals** serving 48 stops, the **38L** trims its travels down to 26 (23 stops of which are shared by the **38-Locals**; the remaining 3 at 44<sup>th</sup>, 46<sup>th</sup>, and 48<sup>th</sup> Avenues are reserved for the **38L** at its [and Geary Street's] westernmost tip). Given the timely travel of the **38L**, one can find its frequency to almost be superior to that of the Locals. Running every 7-8 minutes, compared to the 15-minute frequency of EACH of the Locals, often times TWO Limiteds can fit into ONE Local. No matter where the **38** and **38L** meet, the **Limited** will take 5

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<sup>3</sup> At this point in its route, the **38L** becomes “limitless”—as all bus stops from here on out west are shared with the **38-Local** (and formerly the **18-46<sup>th</sup> Avenue**, before that route's conversion down 33<sup>rd</sup> Avenue to Balboa, and out to Ocean Beach, holding the former territory of a **38-Local**).

minutes less to reach its next destination(s) than the **Local**, given all of the interlude stops the latter route has to make.

On Sundays and certain holidays, the **38L** is supplemented by a third **38-Local**, traveling from the Transbay Terminal to 48<sup>th</sup> Avenue & Point Lobos—sharing every single stop with the other two **38-Locals**, making this third wheel of a bus the lengthiest **38-Geary** route of all—making its 48<sup>th</sup> stop at 48<sup>th</sup> Avenue!

**38AX-Geary A Express:** Following the **38L-Geary Limited** from its westbound terminal at 48<sup>th</sup> Avenue & Point Lobos to Geary & 25<sup>th</sup> Avenue (making 7 identical stops as its more articulate [yet Limited] associate between the aforementioned Points A and B, along with 3 Locally segregated stops at 32<sup>nd</sup>, 30<sup>th</sup>, and 28<sup>th</sup> Avenues), the **38AX-Geary A Express** then says “bon voyage” to picking up commuting passengers—dropping off those on its vehicle at Davis & Pine Street, beside its other Richmond-based A- and **BX** express routes belonging to the **1**, **31**, and **38**.

Conversely, heading westbound with the sunshine, the **38AX** recalls its morning plot, with the addition of a stop on Pine & Montgomery.

**38BX-Geary B Express:** Covering for its Grade-A authority, the **38BX-Geary B Express** begins its morning routine at Geary & 25<sup>th</sup> Avenue, sharing 14 stops with the **38** and **38L** (separately and together), and 1 with the **43-Masonic** at Presidio & Geary, before taking a smooth ride east to Davis & Pine with no passenger interruptions. Reversing its direction in the evenings, the **38BX** shares Pine & Montgomery with its Expressive partners, and reviews its morning commute backwards. But then when it reaches Geary & Park Presidio, it purposefully fails to make the same 3 stops at 17<sup>th</sup>, 20<sup>th</sup>, and 23<sup>rd</sup> Avenues like it did in the morning—instead heading straight for 25<sup>th</sup> Avenue, showing its superiority to the **38-Locals** and **Limited**, and cutting its route off by approximately 1/3 and 33%.

**39-Coit:** As it is with numerous morning-and-evening-weekday-rush-hour-peak-period-only express bus routes such as the **81X-Caltrain Express**, the **82X-Levi Plaza Express**, and the **88-BART Shuttle**, the titular portion of the **39-Coit** pertains to only a/ the terminal stop on the route (in this case, Coit Tower).

Heading north-/inbound (to Fisherman’s Wharf), the **39**’s area of dominance rests along Union Street for nearly 1/3 and 33% of the entire route. Traveling south-/outbound, Powell Street takes the cake with almost ¼ and 25% thereof.

**41-Union:** Shadowing the passenger-packed **45-Union/Stockton** for the first 2/3 of its (the **41**’s) route, and initial 5/8 of that of the **45** (both buses begin at Lyon & Greenwich, adjacent to the entrance to The Presidio), this rush-hour-only-60-foot-articulated electric trolleybus (the **45** is a standard 40-footer), the **41-Union** spends close to 2/3 (17 stops) of its complete run (27 stops) on Union Street. The remaining third (separate from its 45-year-old associate) of the **41** is divided evenly among Clay Street, Columbus Avenue (3 stops per roadway), and three random stops south of Market Street (SOMA)—including its terminus at Howard & Main, kitty-corner to the Temporary Transbay Terminal.

**43-Masonic:** Traveling from one end of San Francisco to the other in zig-zag-like formation—starting in the southeast at Geneva & Munich, and ending in the northwest at Chestnut & Fillmore in the Marina District, marking territory in all interluding neighborhoods—the **43-Masonic** DOES NOT bear one realm of plurality/dominance. Although Masonic Avenue features 7 bus stops (holding 8% of the **43**’s complete journey), that is only one or two more than those residing on the other numerous streets the route reaches over its hilly, twisty, windy 87 bus-stop ride. Initially, the **43** showed “Forest Hill Station” on its buses’ front route identification signs—rotating between that exact midway point of the entire route, and the ultimate destination, according to the traveled direction.

**44-O’Shaughnessy:** Like the **33-Stanyan**, no sooner does the **44** touch O’Shaughnessy Boulevard than it heads off into different territory. With 3 stops on the naturesque up-/downhill (uphill heading north, downhill heading south) stretch—only one of which loads and unloads passengers regularly—the **44** instead secures Silver Avenue as its claim to fame<sup>4</sup>. With 15 stops on that roadway—all of which make up the predominant passenger boarding and disembarking of the route, thus totaling 23% of the line (18% more than the bus’s titled terrain)--the **44** pops on- and off of other roadways within its crosstown travel from Evans & 3<sup>rd</sup> Street in the Bayview-Hunter’s Point District to California & 6<sup>th</sup> Avenue in the Inner Richmond. On November 30, 2011, the **44**’s travel on the northern end was extended 7 blocks westward on Clement from 7<sup>th</sup> Avenue to Park Presidio, then right on California to provide direct connections with the **28-19<sup>th</sup> Avenue**, before returning 7 blocks east to its terminal at California & 7<sup>th</sup> Avenue.

**45-Union/Stockton:** Signified by its title, the **45-Union/Stockton** DOES NOT have any “personal territory”.<sup>5</sup> Sharing 20 stops (5/8; 63%) of its 32-stop run with its Unionized **41**-year veteran co-worker, and 14 with the **30-Stockton** (making for 7/16 and 44% of the **45**)<sup>6</sup>, the **45** is one of very few surviving routes that *perfectly* parallels other routes—

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<sup>4</sup> According to San Francisco 3<sup>rd</sup> Grade Teacher, Ms. Anne Hartletin, the **44-O’Shaughnessy** was originally entitled “the *51-Silver*” during her schoolgirl days long ago.

<sup>5</sup> In addition, because all three bus routes—the **30**, **41**, and **45**—operate as electric trolleybuses with overhead pantograph wiring, the **45** cannot bypass any of its traveling partners should they be held up at a bus stop and the **45** is “free-flowing”, due to interlocking pantographs overhead. Unless the pantographs become dislodged from the wires (in case of sharp turns, speedy pullovers, or [busy] intersections bearing overhead wires in multiple directions), or the bus driver electronically lowers the pantographs from the wires to the bus body during a breakdown—in which the electric trolleybus can convert temporarily to hybrid-diesel operation—no following trolleybuses can defy their leader’s authority!

<sup>6</sup> The meeting point of all three routes (5 including the nearby **8X-Bayshore Express** and **39-Coit**) is at Stockton & Columbus—just beyond the midway point of the **30** and **45**. From there, the **45** trails the **30** until both routes call it quits at the Caltrain Depot by 4<sup>th</sup> Street & Townsend.

created specifically to assist the **30** and **41** throughout their respective realms of plurality-dominance (along with the **BUSY** Stockton Street-Chinatown portion of the **8X**). By itself, the sum of 18 stops on Union Street and 6 on Stockton, 56% Union fees and 18% Stockton-taking, gives a grand total of 24 stops and 75% Union-Stockton merging for the **45-line**! On January 21, 2012, at the commencement of construction for the Central Subway/Phase II of the Third Street Light Rail Project, the **30-Stockton** and **45-Union/Stockton** electric trolleybus lines were rerouted one block west heading south on 5<sup>th</sup> Street from Stockton & Sutter in Union Square, towards their terminal at 4<sup>th</sup> & Townsend in front of the Caltrain Station. Although the stop locations were different, the # thereof remained the same as before.

**47-Van Ness:** A very direct north-south route from the Caltrain Depot to Fisherman’s Wharf—tracing the shape of the letter C throughout its operations (not too dissimilar to the traveling style of the **28-19<sup>th</sup> Avenue**)—the **47** acutely defines the meaning of municipal plurality by bearing Van Ness Avenue as the meat of (exactly ½ of) its route, with two thin pieces of bread on either end heading east-west.<sup>7</sup>

**48-Quintara/24<sup>th</sup> Street:** The longest (bus stop-wise) east-west bus route from the Sunset District of San Francisco, the **48-Quintara/24<sup>th</sup> Street** stays true to its two-part title ONLY DURING MORNING AND EVENING SCHOOLDAY PEAK PERIODS (like the **9L-San Bruno Limited** and **28L-19<sup>th</sup> Avenue Limited**). During midday hours, weekends and holidays, the **48-line** gets rechristened “the **48-24<sup>th</sup> Street**”. Operating between 3<sup>rd</sup> & 20<sup>th</sup> Streets and West Portal Station, with 24<sup>th</sup> Street as its dominant domain (with 18 stops and 22% of the total route), the **48** can’t even see Quintara Street from its western terminal at West Portal and thus does not set foot on its entitled roadway

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<sup>7</sup> On an historical note: Prior to 2001, the **47-Van Ness** was originally a standard 50-foot electric trolleybus, operating from 11<sup>th</sup> & Howard Streets to Van Ness & North Point—duplicating the Van Ness Avenue portion of the **49-Van Ness/Mission**. At that time, three buses operated along Van Ness—the **49**, the **47**, and a former diesel bus route entitled “the **42-Downtown Loop**”. This mind-boggling bus essentially owned two separate routes (one being the **Red Loop**; the other as the **Gold Loop**) which each bore their own single endpoint (as with the **17-Park Merced**). When the route(s) proved too complicated for riders to comprehend, Muni broke the lengthy route into two separate double-ended lines—taking the form of the newly-installed **10-Townsend**, and the revamped **47-Van Ness** in diesel bus form with expanded ground covered along North Point Street from Van Ness to Powell & Beach at Fisherman’s Wharf (terminating beside the Kirkland Division shelter for Muni standard-size [hybrid] diesel buses), and also South of Market Street along 11<sup>th</sup>, Bryant, and 4<sup>th</sup> Streets to the Caltrain Station. When the **47** was altered, it became the first route to solely operate newly-acquired hybrid-diesel buses—bearing more environment-friendly exhaust features, as well as internal technological passenger convenience taking the form of automated announcements (specifically, approaching bus stops and general Muni passenger safety rules and guidelines). At first, the automated announcer for these buses was female. But then, on December 5, 2009, she/it underwent an adjustment and became a man! (Actually, the **47** was already “man-made” in terms of its technical verbiage)

during that time block. Once school lets out (and begins), the **48** continues west of West Portal to the Great Highway & Rivera/Ocean Beach to shuttle students attending the cluster of schools in the Inner and Outer Sunset. When school is not in session, the western extension of the **48** is virtually deserted by its passengers in that corridor. Perhaps most of them find their way out to the ocean via the **L-Taraval** and **66-Quintara**. When the **48** does cover Quintara Street, it adds an additional 17 stops and 21% travel to its already hefty schedule.

**49-Van Ness/Mission:** Save for a short seven-stop stretch along Ocean Avenue from City College at Phelan Avenue to Mission Street, partly paralleling the **K-Ingleside/T-Third Street** light-rail route, the **49-Van Ness/Mission** stays true to its duplex title every inch of the way. At South Van Ness & Mission, the **49** veers a sharp left heading north along Van Ness Avenue to North Point & Van Ness. On NextBus shelter display signs, this bus reads as **49-Mission-Van Ness** in BOTH directions. Heading south-/outbound, the bus hits Van Ness first, then Mission—with the reversal occurring heading north-/inbound, thereby making the above sign half true. Before 2001, when three bus routes roamed Van Ness, the **49-line** took the form of a standard 50-foot electric trolleybus. But when the late *42-Downtown Loop* was dropped/replaced, the **49** compensated for the loss by expanding its physical capacity to 60-foot articulated electric trolleybuses—identical to its Mission Street standby, the **14** (and for a time, the **31-Balboa**, the current [2011] **41-Union**, and the late, great *7-Haight*. Next to the **14-Mission** and **14L-Mission Limited**, each with 92%, the **49-Van Ness/Mission** holds the greatest plurality percentage at 87% of its complete route contained within its designated area(s). Next comes the **14X-Mission Express** at 83%, followed by both the **38-Geary** and **38L-Geary Limited** at 81%.

**52-Excelsior:** Although merely making 4 stops on Excelsior Avenue, the **52-line** in fact covers quite a bit of ground in the Excelsior District (as does the **29-line** in the Sunset District beyond Sunset Boulevard itself)—including 4 stops on Brazil Avenue and a quarter of single stops at respective neighborhood street corners within the Excelsior District—totaling 12 stops, just under 1/3 of the complete bus route. Besides the Excelsior, the **52** climbs Diamond Heights/Street for 15/37 and 41% of the route. On December 5, 2009, the **52** was “demoted” from a standard 40-foot- to a shorter 30-foot hybrid-diesel bus due to passenger loads and ultimate extensive hill travel.

**54-Felton:** Taking a slim tour of Felton Street—with only 6 stops and subsequently 6% of the total route—the **54** makes an extensive east-west trip from the Bayview-Hunter’s Point to the Daly City BART Station (opposite the terminal of the **28-19<sup>th</sup> Avenue**, and down the John Daly Boulevard hill from that of the **14-Mission**) along the City’s southern stretch, sharing its geographic percentage equally among various streets and roadways in the numerous neighborhoods it visits from one point to the other.

**56-Rutland:** Scanning Visitacion Valley, the **56-Rutland** shuttles student residents of said neighborhood and Bayview-Hunter’s Point District to and from Visitacion Valley Middle School (its eastern terminus) on weekdays, albeit maintaining weekend operations of equal distance as well. Rutland Street constitutes a trim 4 stops and 15% of

the route, with other Visitacion Valley roadways compensating for the remainder of the route.

**66-Quintara**: A convenient community-based bus route traveling north-to-south from the Outer- to Inner Sunset neighborhoods, the **66-Quintara** generates more daily mileage on Quintara Street than its predecessor, the **48-line**, due to its (the **66**) routine travel up-and-down its dominant region of 10 bus stops and 34%. Although the **66** makes 6 fewer stops along Quintara Street than the **48** (veering south/left on 30<sup>th</sup> Avenue—with the **48** furthering 16 blocks westward to 46<sup>th</sup> Avenue), its eastern territory—shared with the **48** during morning and evening weekday schoolday-oriented rush-hour time blocks—contains more ridership than the west side. With the **48** heading south/right towards West Portal from Quintara & 17<sup>th</sup> Avenue, and the **66** shifting north/left towards its terminal at 9<sup>th</sup> Avenue & Judah, the **6-Parnassus** is there waiting at 14<sup>th</sup> Avenue to pick up the slack and continue the publicly-transportative run along Quintara Street for 5 blocks—east to 10<sup>th</sup> Avenue before veering off.

**67-Bernal Heights**: With a tiny 3 bus stops, 1/9, and 11% of its route consisting of Bernal Heights Boulevard, and the neighborhood-district itself, the **67** became considerably simpler on December 5, 2009. Formerly serving as a figure-8-type route throughout the Mission—terminating at 24<sup>th</sup> Street & Mission on the northeast AND southwest sides of the exact intersection, albeit taking different pathways (one down Folsom Street, the other across Alemany Boulevard) to get the “same” destination—the **67** shrunk its vehicle size down by ¼ from 40 to 30 feet, and instead drew a more direct run from 24<sup>th</sup> & Mission to Alemany Boulevard, and back again.

**71-Haight/Noriega**: Like the **30-Stockton**, **45-Union/Stockton**, **48-Quintara/24<sup>th</sup> Street**, and **49-Van Ness/Mission** before it, the **71-Haight/Noriega** is a route of “plagiarized” proportions. However, unlike its “superiors”, the **71-line** was *not* created to relieve ridership pressure from other routes dominating its two titular territories. Rather, the **71** controls the mainstream of both Haight and Noriega Streets. With 13 bus stops/22% from each street donated to the **71**’s cause, an outcome of 26 stops, 45% and 13/29 means of dominance thereof arises. Two additional major areas on the **71** appear in the form of Market Street downtown and Lincoln Way in the Sunset—through which 10 stops, and 17% from each roadway apply to the **71**’s makeover, leading to a grand total of 34% and 10/29 means of dominance.

For buses bearing Haight or Noriega Street solely—the **16X-Noriega Express** only operates during morning- and evening weekday rush-hour/peak periods, and therefore requires the **71** to act as its long-term substitute (as all stops on Noriega are served by both routes). Before December 5, 2009, an electric trolleybus (originally standard 50-foot-40-foot-, and later [2007] 60-foot articulated) by the name of “the *7-Haight*” served as full-time back-up to the **71** on Haight and Market Streets—with both lines making **IDENTICAL** stops as one another every inch of the way.<sup>8</sup> When the 7 was

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<sup>8</sup> This was the only individual route in San Francisco Municipal Railway history to own a 100% matching outline to [part of] another route within its complete makeup.

Beginning in September 2005, the *7-line* went from being a full-time route to that of a

scrapped, routes like the **6-Parnassus (33-Stanyan, 37-Corbett, 43-Masonic, and N-Judah)** stepped up to the plate to assist the **71** in its eastbound Haight-Market Street run at respective meeting grounds.

**71L-Haight/Noriega Limited:** Like the **8BX-Bayshore B Express** and **14X-Mission Express**, the **71L-Haight/Noriega Limited** is the rush-hour equivalent of its local ally—in the dominant direction. In the mornings, the **71L** heads east-/inbound to the Transbay Terminal, and west-/outbound to 48<sup>th</sup> Avenue & Ortega/Ocean Beach—almost duplicating the local route. At 8 bus stops on Noriega Street (15% total route) and 13 on Noriega (25% total)—the **71L** hits the jackpot at 21 bus stops and 40% of its complete run, with regards to travel on its title roads.

**76-Marin Headlands:** Surprisingly not the only Muni bus route to cross San Francisco City limits into neighboring towns (the **8X-Bayshore Express** and its **A** and **B**-level associates, **9-San Bruno**, **14-Mission [Limited and Express]**, and **28-19<sup>th</sup> Avenue [Limited included]** all set foot in Daly City—with the **18-46<sup>th</sup> Avenue**, **56-Rutland**, and **K-Ingleside/T-Third Street** all within arm's reach thereof), the **76-Marin Headlands** crosses the Golden Gate Bridge, heading into its entitled northbound destination—making for an even 1/3 and 33% routing outside the city of San Francisco. FYI, this bus only operates once a week—on Sundays, and certain holidays.

**80X-Gateway Express:** The shortest route in the San Francisco Municipal Transportation Agency (SFMTA) as of December 5, 2009<sup>9</sup>—bearing only one operational direction (in-/northbound) at 1 time of day (weekday morning rush-hour/peak periods) with one (1) single 18-minute shuttle bus ride, and 6 stops therein with no (0) area of dominance—the **80X-Gateway Express** provides luxury service for out-of-town San Francisco Caltrain commuters from the terminal at 4<sup>th</sup> & Townsend to downtown and the Financial District at Sacramento & Battery.

**81X-Caltrain Express:** As the route title implies, the **81X**, like its **80**-year-old “superior”, also acts as a taxi service for weekday morning rush-hour/peak-period San Francisco workers commuting into the City via Caltrain. Bearing 8 bus stops, 6 bus departure-arrivals, north-inbound-only operations worth a mere 14-17 minutes of valuable travel time, the **81X** rolls from the San Francisco Caltrain Station-Depot at 4<sup>th</sup> & Townsend to Beale & Howard in the South of Market Area (SOMA). With regards to its official title, the **81X-Caltrain Express** contains 1/8 and 13% worth of its short route within its rather long name.

**82X-Levi Plaza Express:** Although none (0) of the stops on the **82X-Levi Plaza Express** bear the first two words (2/3) of the route's title within their own identification, the final stop on the morning rush-hour/peak-period north-/inbound bus (Sansome &

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weekday morning- and evening peak-period-only shift.

<sup>9</sup> Before then, the standard-size-30-foot *89-Laguna Honda* bus—bearing 2 bus stops (at Forest Hill Station and Laguna Honda Hospital) and 2 directions—took the cake.

Filbert) rests beside a miniature plaza with “Levi” as its first name—thereby holding a fraction of 1/11 and weighing in at 9% of the **82**’s title.

As for areas of dominance, heading in-/northbound in the mornings, Sansome Street contains 5/11 and 45% of the trip; while Battery Street logs in at 4/11 and 36% leading out-/southbound.

Before the 68<sup>th</sup> Anniversary of Pearl Harbor on Monday, December 7, 2009, the **82X** was referred to as “the **82X-Presidio Express**”—with an extensive route from The Presidio to 4<sup>th</sup> Street & Townsend at the Caltrain Station-Depot, sharing terrain with the **28-19<sup>th</sup> Avenue**, **30X-Marina Express**, and the **43-Masonic**.

**83X-Mid-Market Express:** On Monday, June 11, 2012—two days before the one-year anniversary of the inauguration of the **NX-Judah Express**—Muni installed its latest rush-hour express bus route to ease passenger-commuter travel between SOMA (South of Market Area) and the heavily employed Civic Center region of downtown-Market Street. Serving a mere 3 stops over a stop-free 10-minute travel period, the **83X** travels due north in the morning after picking up [mostly] working passengers from the Caltrain Station at 4<sup>th</sup> & Townsend to dropping them off at its terminal at 9<sup>th</sup> & Market. In the afternoon/evening, steps and passengers are retraced southbound from 8<sup>th</sup> & Market to 4<sup>th</sup> & Townsend. Unlike its numerically preceding peak-hour express bus routes, the **83X** operates an additional two hours at the beginning and end of each weekday beyond the standard rush-hour endpoints of 9:00 a.m. and 6:00 p.m.—finishing at 11:00 a.m. and 8:00 p.m.—for a total of 8 hours of operation on a daily basis (7:00 a.m.–11:00 a.m.; 4:00 p.m.–8:00 p.m.).

As San Francisco public transit history shows, the number **83** originally belonged to a local daylong bus route entitled “the **83-Pacific**”—prior to its merging with the **12-Folsom** in 2001 to become “the **12-Folsom/Pacific**”. Additionally, the **83X-Mid-Market Express** became the second 21<sup>st</sup>-Century Muni bus route to have its numeric title repeated—with the **8X-Bayshore Express** receiving the honor from the ancient **8-Market** on December 5, 2009.

**88-BART Shuttle:** Saturday, December 5, 2009—a day that will forever live in San Francisco Municipal Transportation infamy—marked the end of the **88-line**’s extension west of Sickles & Alemany to Lake Merced & Font Boulevards via Park Merced, covering similar territory to the **17-Park Merced** and **18-46<sup>th</sup> Avenue**. Cutting the route’s run down by approximately one dozen (12) stops and almost half of its morning rush-hour/peak-period passenger percentage and travel time, the **88-BART Shuttle** now carries morning and evening commuters to and from the Balboa Park BART Station, and the Outer Mission. Although its evening west-/outbound passenger load west of the Mission was minimal, in the mornings it was quite the opposite.

Anyway, only one stop (the eastern/inbound terminus) on the **88** is affiliated with BART, and that is Balboa Park—chiming in at 1/11 and 9% of the complete route. However, the western/outbound endpoint of Sickles & Alemany is located directly under the BART light-rail overpass containing tracks connecting Daly City and Balboa Park Stations. Additionally, the main region of the **88-line** is on Mission Street—totaling 6 stops (6/11) and 55% of the route.

**90-San Bruno Owl:** The “owl” in the **90-San Bruno Owl** reflects the fact that this bus runs at night when most other routes have called it a day and are no longer operating. Consequently, the **90** not only covers for the **9-San Bruno**, but for numerous additional routes also—thus making it a compilation of Muni line excerpts citywide.

As far as San Bruno Avenue goes, the **90** marks territory on 11 stops out of the total 49, conjuring up 22% of the complete route. However, in terms of regions tackled by the **9-line** and retraced by the **90-line**: a further 7 stops on Bayshore Boulevard, 10 stops on Potrero Avenue, 5 stops on 11<sup>th</sup> Street, and 1 stop on Division & Bryant makes for a grand compilation of...(11+7+10+5+1)...34 stops!

Heading north-/inbound, after the **90** touches 11<sup>th</sup> & Mission Streets, the bus continues onward and upward to Van Ness Avenue where it compensates for the sleeping **47-Van Ness** and **49-Van Ness/Mission** for 18 more stops—identical to those served by the **47** and **49**.

**91-Owl:** Officially the lengthiest (yet understandably bearing the lightest passenger load in the WEE WEE hours of the morning) route in the San Francisco Municipal Transportation Agency (SFMTA) with 108 stops to make in one night, the **91-Owl**, like its **90**-year-old elder, constitutes a compilation of overnight-out-of-service bus routes. Also operating in a nearly full-circle formation similar to that of the **K-Ingleside/T-Third Street** light-rail route, the **91** begins at West Portal Station and takes **THE LONG WAY** west-/inbound to 19<sup>th</sup> Avenue & Holloway/San Francisco State University—seemingly purposely avoiding an otherwise 10-minute direct commute shared by the **17-Park Merced** bus and **M-Ocean View** light-rail.

In this order, the **91-Owl** pays tribute to 8 Muni routes—starting off with a nod to the **K-Ingleside/T-Third Street**, **M-Ocean View**, and **17-Park Merced**—with 3 stops along West Portal Avenue. Up next are 9 stops on Ocean Avenue in reflection of the **K-Ingleside**. Soon after appears a lengthy shadowing of the **8X-Bayshore Express**, consisting of 24 stops: 12 on Geneva Avenue, 3 on Santos Street, 2 on Sunnysdale Avenue, 5 on Visitation Avenue, and 2 on Bayshore Boulevard. Then we have a 20-stop stretch on 3<sup>rd</sup> Street, in reference to the (you guessed it!) **T-Third Street**. A 22-stop passage of the **30-Stockton** and **45-Union/Stockton** follows, with: 1 stop at the Caltrain Depot/4<sup>th</sup> & Townsend, 5 on 3<sup>rd</sup> Street, 2 on Kearny Street, 4 on Stockton Street, 5 on Columbus Avenue, 3 on North Point Street, and 2 on Van Ness Avenue. Add ‘em all up, and whaddya get? A transition to the overlapping **28-19<sup>th</sup> Avenue** and **43-Masonic**! That’s right—for 4 stops on Lombard Street (3 of which are shared by the **28** and **43**), 1 at Richardson & Francisco, 4 on Park Presidio, and 21 on 19<sup>th</sup> Avenue, you can complete your nighttime tour of the city of San Francisco on one public charter bus!

**108-Treasure Island:** Just like the **76-Marin Headlands** travels north-/inbound along the Golden Gate Bridge, the **108-Treasure Island** heads east-/outbound along the Bay Bridge to its entitled destination. Even though Treasure Island only makes up 2/15 and 13% of route **108**, the bus spends a decent amount of time on Avenue H “overseas”—4 stops all together. On the west-/inbound front (from Treasure Island to the

Transbay Terminal), Avenue H holds 27% domination, with 4/9 and 44% on the outbound journey.<sup>10</sup>

**F-Market & Wharves:** Except for the western terminal of 17<sup>th</sup> Street & Castro, and the midway point at Don Chee Way & Steuart Street, every inch of track on this solo historic streetcar route resides beside the waterfront along The Embarcadero—flowing into Fisherman’s Wharf—or cruises along the downtown element of Market Street. For the **F-line**, Market Street stops mark up 18/30 [reduced to 3/5 in simplest form] and 60%, while those on the Wharves current conjuring up 12/30 [2/5] and 40%. Add the two fractions and percentages together, respectively, for a total of 5/5 and 100%. Voila!

**J-Church:** Prior to 1995, Church Street completely controlled the **J-line**’s street-level travel—with (to this day) 13 stops, spanning terrain between the route’s southern endpoint at Church & 30<sup>th</sup> Streets, alongside the **24-Divisadero**, the current **36-Teresita**, and retired *26-Valencia* bus lines, and the northern tip residing at Church & Duboce. But in ’95, Muni took advantage of a previously-constructed-but-never-used-freeway-centered-BART-like, ghostly right-of-way to connect/extend the **J** from Church & 30<sup>th</sup> Streets to Balboa Park Station via San Jose Avenue—containing 7 additional stops along the path. Outside of-, and prior to that extension, the **J-Church** maintained an acutely direct, sideways L-shaped tracking from Church & 30<sup>th</sup> to Embarcadero Station—with the turning point taking place at Church & Duboce as the train headed underground through the Duboce Tunnel entrance beside the **N-Judah**, reaching 5 station stops in the underground Muni Metro subway—which, for the **J-Church** and **N-Judah** light-rail routes, only include the busier Market Street-downtown stations: Van Ness, Civic Center, Powell, Montgomery, and Embarcadero.

Statistically speaking, Church Street makes up just over half (13/25; 52%) of the entire **J-line**. The 4 stops in its second right-of-way, compensating for steep hill grades along Church Street between 22<sup>nd</sup> and 18<sup>th</sup> Streets and referred to as “Right-of-Way” run parallel to Church Street itself and can therefore be considered part of the dominant stretch.

**KT-Ingleside/Third Street**<sup>11</sup>: This exhausting duplex of a light-rail route has quite a huge history behind it. Prior to April 7, 2007, the **K-Ingleside** line operated from

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<sup>10</sup> Like the: **J-Church**, **KT-Ingleside/Third Street**, **M-Ocean View**, **3-Jackson**, **9L-San Bruno Limited**, **12-Folsom/Pacific**, **14-Mission**, **14X-Mission Express**, **17-Park Merced**, **19-Polk**, **21-Hayes**, **22-Fillmore**, **23-Monterey**, **28-19<sup>th</sup> Avenue**, **29-Sunset**, **31BX-Balboa B Express**, **35-Eureka**, **36-Teresita**, **37-Corbett**, **38-Geary**, **38BX-Geary B Express**, **38L-Geary Limited**, **39-Coit**, **41-Union**, **43-Masonic**, **48-Quintara/24<sup>th</sup> Street**, **49-Van Ness/Mission**, **52-Excelsior**, **54-Felton**, **56-Rutland**, **66-Quintara**, **67-Bernal Heights**, **71-Haight/Noriega**, **76-Marin Headlands**, **82X-Levi Plaza Express**, and **91-Owl**, the **108-Treasure Island** bears far fewer stops (more than 1 stop difference) in one direction than the other.

<sup>11</sup> On vehicle display signs, this two-halved title is never shown as such (save for **nextbus** bus shelter prediction signs). Traveling in-/eastbound: from Balboa Park to West Portal Station, **K-Ingleside** appears in the heading, with **T-Third Street** taking over the

Balboa Park Station to Embarcadero Station via Ocean Avenue (its own dominant domain), Junipero Serra Boulevard and West Portal Avenue marking the midpoint, then underground to the Twin Peaks Tunnel, eventually terminating alongside its four subway route friends: the **J-Church**, **L-Taraval**, **M-Ocean View**, and **N-Judah**. Before 2007, the **K-line** was the shortest Muni Metro subway light-rail route (in terms of distance).<sup>12</sup>

As for the **T-Third Street**—primarily constructed as a more picturesque, tourist-friendly light-rail route of a replacement for the [hefty] Third Street portion of the extinct *15-Third Street* 60-foot articulated bus line, the line went through a three-month trial period of pilot service testing on weekends only (holidays excluded) from January-March 2007. Bearing endpoints at (its current southern terminal of) Sunnydale & Bayshore, borderline with Daly City, and Castro Street Station, the newly-installed-entirely-platform light-rail route added a sixth streetcar to the already bustling Muni Metro subway. Proving incredibly hectic during weekday morning- and evening rush hour timeslots—particularly at the Castro Street Station switchback—during the initial three months of full-time Castro-Sunnydale operations as an independent route, from April-June 2007, the SFMTA decided to combine the newly-designed **T** with the current **K**—in which the “6<sup>th</sup> train” was scrapped, and the **K-Ingleside** essentially extended southbound from Embarcadero Station to Sunnydale & Bayshore via four aboveground platform stops along The Embarcadero (shared by the **N-Judah**) from Folsom Street to the Caltrain Depot at 4<sup>th</sup> & King Streets, and a total of 17 platforms on 3<sup>rd</sup> Street. Although the **K** was virtually duplicated in both length, time travel, and overtime passenger load, the single-car trains used to operate the route were NOT. This was largely due to the fact that all 17 newly-designed platforms along 3<sup>rd</sup> Street could hold no more than single-car trains, although the older 12 stations and three Embarcadero platforms shared with the **N-Judah** could easily manage it.

When it comes to numbers, the Ingleside District/Ocean Avenue covers just under ¼ (exactly 10/43 and 23%) of the **K**, and 3<sup>rd</sup> Street nearly 1/3 of the **T** portion (precisely 15/43 and 35%) of the total line.

**L-Taraval:** As the name states, Taraval Street dominates the above-ground portion of this light-rail route for 32 blocks from 46<sup>th</sup> to 15<sup>th</sup> Avenues, inclusive—calculating 15/30 [reduced to ½ in simplest form] stops, and 50% of the line in full. At one time early in San Francisco Municipal Railway history, the **L-Taraval** terminated at 46<sup>th</sup> Avenue & Taraval (as evidenced by remaining vintage-style cobblestone tracks set up at the intersection for train switchback). But even with the 3-stop extension to the San Francisco Zoo at 46<sup>th</sup> Avenue & Wawona, and the right-/southbound turn on 15<sup>th</sup> Avenue heading toward West Portal Station and the Muni Metro subway (making two stops

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throne (via Muni driver activation) from West Portal to Sunnydale & Bayshore.

Heading out-/westbound, **T** becomes **K** upon entering Embarcadero Station. At island and platform passenger stops, **K-Ingleside** and **T-Third Street** resume similar respective positions on their corresponding regional stop signs. When it comes to **nextbus** signs inside above-ground passenger platforms and sidewalk bus stop shelters, **KT-Ingleside/3<sup>rd</sup> Street** takes effect.

<sup>12</sup> The **J-Church** topped the timing at 30 minutes in complete operational length from Balboa Park to Embarcadero.

between the two aforementioned points), Taraval Street (which itself ends at Dewey Boulevard roundabout intersection, adjacent to West Portal Lutheran School) reigns supreme for the **L-line**!

**M-Ocean View:** Although the Ocean View District (with San Jose Avenue and Randolph Street constructing the main roadway) dominates the **M-line**'s travels with 12/28 [3/7] and 43% of the route under its belt, not only does it disappear after the route's first 10 minutes (1/4 of the route's complete 40-minute operation from end to end) of movement—from Balboa Park at Geneva & San Jose to 19<sup>th</sup> Avenue & Junipero Serra Boulevard—but it also sits on the lower end of the ridership scale. Save for the major intersection beginning at Balboa Park and its corresponding crush load of passengers, all neighborhood stops leading from that point until San Francisco State University at 19<sup>th</sup> Avenue & Holloway see very few passengers boarding and disembarking **M** trains (even though almost every one of the 12 stops therein is served for any and all riders' needs). However, it is the remaining 16 stops, starting with SFSU and finishing at Embarcadero Station, when the busy side of the route picks up (yet it meets up with other Muni Metro routes little by little along the way<sup>13</sup>). Once the **K-Ingleside** became extended/combined with the newly-created **T-Third Street** in 2007, the **M-Ocean View** in turn shrunk to the shortest light-rail Muni Metro route in terms of distance (though it shares a 40-minute numeric run with the **L-Taraval**).

Like the **L-Taraval**, the **M-Ocean View** operates 2-car trains on weekdays to serve the additional commuting passengers from work and school, and single-car trains on weekdays to reflect the reduced ridership.<sup>14</sup>

**N-Judah:** No doubt about it; with 40 blocks (48<sup>th</sup>-9<sup>th</sup> Avenues, inclusive) 15/33 total stops, 5/11 and 45% overall, Judah Street controls the majority of the **N-line**'s commute, though like the **M-Ocean View**, its "entitlement" is somewhat calmer in comparison to latter sections of the route (in the **N**'s case, starting at 9<sup>th</sup> Avenue & Irving and continuing to Embarcadero Station). When the **N** veers left/north one block to Irving Street heading east-/inbound, the remainder of Judah Street (ending at 4<sup>th</sup> Avenue) is served by the **6-Parnassus** with two additional stops at 7<sup>th</sup> and 5<sup>th</sup> Avenues. Since Judah merges into Parnassus Avenue at 4<sup>th</sup> Avenue, the complete street virtually stretches a thorough 54 blocks west-to-east!

The **N-Judah** is 1 of 2 lightrail routes which proceeds upward from Embarcadero Station in the Muni Metro subway and continues along The Embarcadero for four additional

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<sup>13</sup> The **K-Ingleside/T-Third Street** at Saint Francis Circle/Junipero Serra & Sloat Boulevards, the **L-Taraval** at West Portal Station, and the **J-Church** and **N-Judah** at Van Ness Station [with those two routes stopping above Church Street Station on/near Market Street, and the **F-Market & Wharves** over Castro Street Station at Castro & Market].

<sup>14</sup> However, during lengthier school vacations, the **L** and **M** may resort to single-car trains on those selected weekdays to compensate for the absence of student commuters and subsequent smaller passenger loads.

platforms (the first three of which are shared by the **K-Ingleside/T-Third Street**) at Folsom, Brannan, 2<sup>nd</sup> & King Street, and 4<sup>th</sup> Street & Townsend at the Caltrain Depot.<sup>15</sup>

The **N-Judah** is the only Muni Metro light-rail route to operate 2-car trains 7 days a week due to its regularly heavy passenger load. Rarely do you find a single-car train on this line. Before the combination **K-Ingleside/T-Third Street**, even disregarding its above ground Embarcadero extension, the **N-Judah** held the honor of reigning as the lengthiest light-rail route in terms of BOTH minutes [45] AND distance.

**NX-Judah Express**: Installed on Monday, June 13, 2011—the **NX** serves as a commuter-friendly-morning-and-evening-peak-hour-only bus route that parallels the **N-Judah** light-rail route for 30 blocks and 11 stops (out of its total 12), from Ocean Beach to Judah & 19<sup>th</sup> Avenue, before driving nonstop to the Financial District and terminating at Sutter & Sansome—thereby earning its titular travel time a strong 92% plurality. Like the cluster of limited or express routes that operate only during rush-hour timeslots: the **1AX**, **1BX**, **16X**, **31AX**, **31BX**, **38AX**, **38BX**, and **71L**, the **NX** heads downtown/eastbound/inbound in the morning and westbound/outbound to Ocean Beach in the evening. Unlike all other Muni routes, the **NX** has a special style of bus reserved solely for its travel—as noted by its identifiable vehicular exterior.

**S-Shuttle**: Debuting in 2001, this “sixth” Muni Metro route originally operated underground only—from Castro to Embarcadero Stations, serving the Market Street area of the subway—during weekday morning and evening peak periods, shuttling commuters to and from work and home, relieving the **J-Church**, **K-Ingleside**, **L-Taraval**, **M-Ocean View**, and **N-Judah** of their heavier passenger loads during those times.

In 2002, the **S-Shuttle** (originally dubbed “Castro Shuttle” by the automated underground announcements) was demoted from regular part-time to strictly on-call by Muni—due to its service requiring additional Breda LRV service, topped off by its corresponding Castro Station turnaround and Embarcadero Station terminal—slowing down the already-crowded Muni Metro operations during those delicate times of day. Upon its demotion,

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<sup>15</sup> On Saturday, August 22, 1998, in an effort to improve train flow, and modernize its technology, Muni piloted and later installed a full-time Advanced Train Control System underground from West Portal-Embarcadero Stations. The following Monday (after 7 ½ months of pilot testing via an additional Muni Metro shuttle line known as “the *E-Embarcadero*”—traveling from Embarcadero Station to the Caltrain Depot), the **N-Judah** was extended by 10 minutes and 4 platforms (identified above) from its longtime terminal at Embarcadero Station to the Caltrain Station along The Embarcadero—beneath the Bay Bridge, past the [soon-to-be] home of the San Francisco Giants Major League Baseball team. During the **T-Third Street**’s three-month trial period of full-time service from April-June 2007, the **N** temporarily terminated at Embarcadero Station regularly like old times. But when passenger traffic grew clogged on single **T-line** trains, the **N** resumed its then-full-time travel to Caltrain. When financial setbacks lowered the boom on Muni on December 5, 2009, Embarcadero Station was declared as the **N-Judah**’s official weekend terminal. Fortunately, after a 2-year sabbatical, weekend service to the Caltrain Station was fully restored on Saturday, October 15, 2011 thanks to Muni customer feedback.

the **S-Shuttle** began serving as a means of extended specialized service on gamedays at A T & T Ball Park and Candlestick Park for the San Francisco Giants and 49ers during baseball and football seasons, or in the event of service reduction of a given Muni Metro line for a certain period of time due to street-level track maintenance along its route. Like the **L** and **M-lines**, the **S** operated both single- and double-car trains, according to traveled terrain and subsequent event coverage.

**K-Owl:** Like all Muni Metro Owl routes, the **K-Owl** only operates above ground because it logically cannot go underground and motor itself on train tracks through a tunnel, stopping for passengers at platforms. Therefore, all 9 Muni Metro subway stations are acknowledged above-, rather than underground. Given that feature, the Ingleside District covers a mere 13/45 and 29% of the **K-Owl**, in sharp contrast to the **K-Ingleside/T-Third Street** light-rail route. Rather, the **K-Owl** predominantly rides along Market Street for a length identical to that of the **6-Parnassus** and the **F-Market & Wharves**. At 20/45 (simply reduced to 4/9) and 44%, Market Street at night is not too dissimilar to the Muni Metro subway at daylight! Prior to the compensated station stops and their “tunnel interludes”<sup>16</sup>, the **K-Owl** makes the same street-level stops prior to West Portal Station as the corresponding streetcar line. Along with the **L-** and **M-Owl(s)**, the **K-Owl** shares an east-/inbound terminal with the **14-Mission** at Steuart & Mission Streets near the Ferry Plaza.

**L-Owl:** Bearing the same stops on Market Street as the **K-Owl** (including those covered between West Portal and Castro), the **L-Owl** holds 20/51 and 39% of its nightly run along that strip. The remainder of its route resides beside **L-Taraval** tracks—for which Taraval Street lands 15/51 and 29% of the total stops made.

**M-Owl:** Improvising for above-ground right-of-ways, the **M-Owl** makes virtually the same stops as its light-rail partner, albeit around the tracks at street corners. Upon reaching West Portal, its route becomes shared by the **K-** and **L-Owl(s)**—with Market Street logging in at 20/48 [5/12] and 42% of the transport profits. The Ocean View District comes in second at 11/48 and 23%.

**N-Owl:** For the **N-Owl**, Market Street narrowly defeats Judah Street when it comes to regional superiority. With Judah Street clocking in at 15/55 (3/11, to put it more simply) and 27% of the complete operation, Market Street wins by a hair with 16/55 and 29% of the whole.

Differences between the light-rail and bus service include the **Owl** version veering off onto Haight Street from Carl & Cole to avoid the Sunset Tunnel connecting Carl & Cole to Noe & Duboce, yet run parallel to the original **N-line** for 10 stops overlapping parts of the **43-Masonic**, **6-Parnassus**, **71-Haight/Noriega**, and **22-Fillmore**—the last line of which the **N-Owl** follows to Church & Duboce, leading to its Market Street run from Church Street heading east. Upon reaching Steuart & Mission, the **N-Owl** ventures onward to the corresponding streetcar’s southern terminus at 4<sup>th</sup> Street & Townsend,

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<sup>16</sup> In other words, autobus street-level stops not made by the underground trains due to tunnel travel between subway stations are acknowledged by the Owl routes.

kitty-corner to the Caltrain Depot, making street-corner bus stops parallel to its Embarcadero platforms (as shared by the **T-Owl**), with 2 additional marks at The Embarcadero & Howard and The Embarcadero & Townsend.

**T-Owl:** Unlike the combined **K-Ingleside/T-Third Street**, the **T-Owl** distinguishes its route from any of the **K-Owl**'s operatives. Operating only as far as Van Ness & Market, the **T-Owl** covers identical street-level ground to its light-rail associate, with an additional bus stop at The Embarcadero & Howard. Given its Van Ness terminal, the **T-Owl**'s Market Street run is considerably shorter than those of the other Muni Metro subway Owls. With that, 3<sup>rd</sup> Street (rather than Market) gains control of the **T-Owl**'s motives—totaling 15/36 and 42% of the stops thereon—making this **Owl** the sole subway-based Owl route to bear dominance on its entitled runway.

**Powell-Hyde Street Cable Car:** As expected, this cable car line is equally dominated by its two shared streets—with 12/29 and 41% of the hill climb taking place on both Powell and Hyde Streets, respectively. Add the two streets, their fractions and percentages together for an unbeatable deal of 24/29 and 83% residence on the two track ways. The remaining 5 stops occur on Washington Street when traveling south-/inbound to Powell & Market, and conversely on Jackson Street heading north-/outbound to Hyde & Beach Streets.

**Powell-Mason Street Cable Car:** Like its alter ego, **Powell-Hyde**, **Powell-Mason** shares its route's dominance somewhat evenly between its two titular territories. With Powell Street covering 12/24 (1/2) and 50%-, and Mason marking 9/24 (3/8) and 38% of the rollercoaster ride, a result of 21/24 (7/8) and 88% control of Powell-Mason, by Powell-Mason, for Powell-Mason occurs. The remaining stops on the line feature 2 stops each on Columbus and Taylor Streets traveling north-/outbound to Taylor & Bay, along with another double set of 2 on Taylor and Washington Streets heading south-/inbound to Powell & Market.

**California Street Cable Car:** This landmark San Francisco cable car route stands alone for many reasons. Apart from being the only cable car not to travel north-south, or on Powell Street, **IT IS THE ONLY LINE IN THE ENTIRE SAN FRANCISCO MUNICIPAL RAILWAY TO SERVICE 100% OPERATIONS ON ITS ENTITLED ROAD!** All 19 of its 19 stops reside on California Street—east of the **1-California** electric trolleybus line, as well as the **1AX-California A Express** and **1BX-California B Express** rush-hour hybrid-diesel buses—thereby making California Street almost fully operational on the level of public transportation.